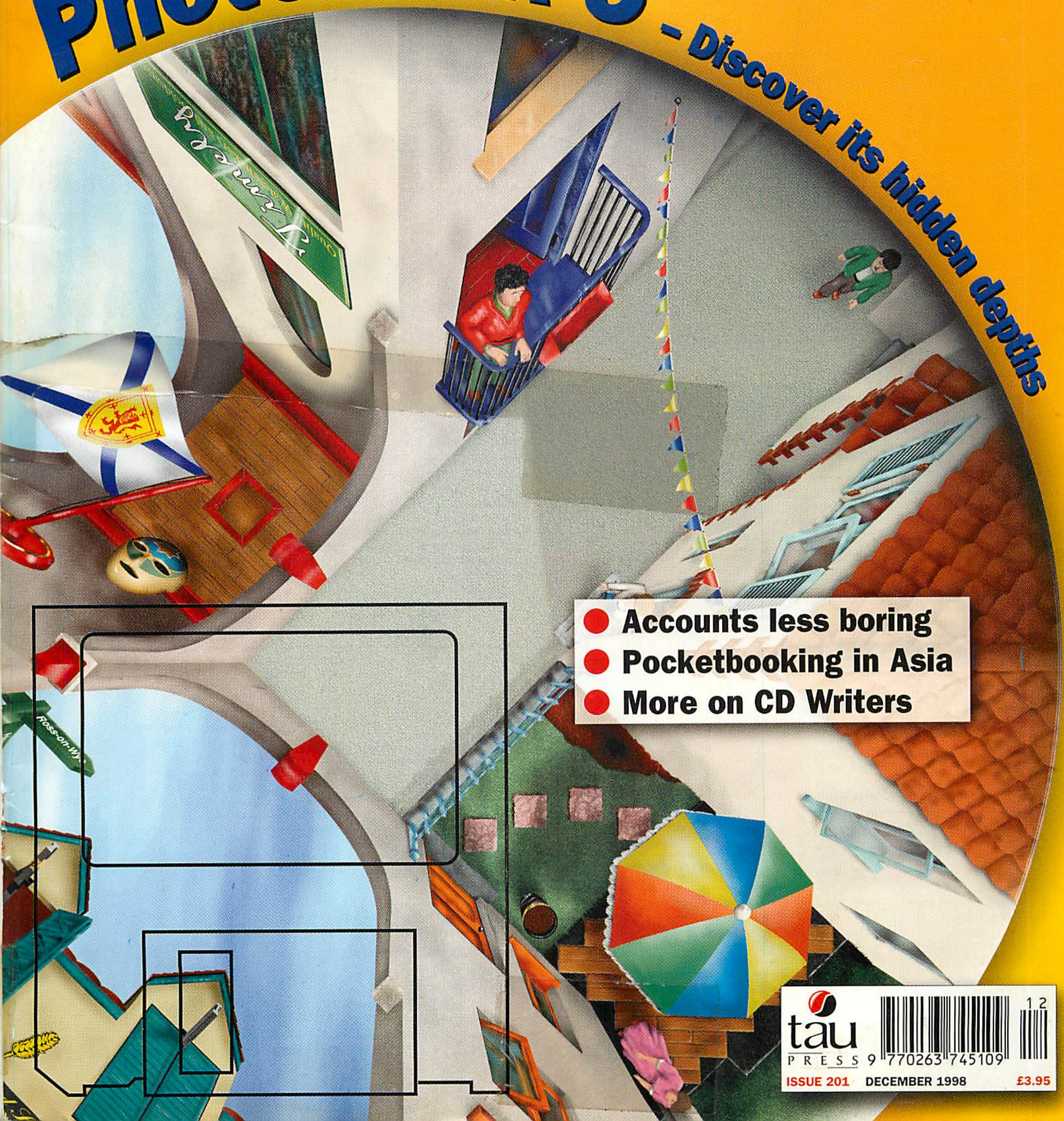
LATEST ON ACORN DEBACLE

The best-selling RISC OS magazine in the world

ACORN USER

Photodesk 3 – Discover its hidden depths



- Accounts less boring
- Pocketbooking in Asia
- More on CD Writers

tau PRESS 9 770263 745109 12
ISSUE 201 DECEMBER 1998 £3.95

CASTLE TECHNOLOGY

FOR ALL YOUR ACORN HARDWARE & PERIPHERALS

INTERFACES

25% off when bought with drive or scanner etc

CT's Storm SCSI interface offers unbeatable performance. Using 15MB/s SCSI components and our ultra-reliable SCSI FS, Storm's a guaranteed winner.



	Ex VAT	Inc VAT
A30x0 IDE interface kit - 2.5" hard drive	£52	£61.10
A3020 fixing kit - 2.5" hard drive	£8	£9.40
A3/400 IDE interface for 2.5" & 3.5" h.d.	£60	£70.50
Storm8 SCSI2 interface - A30x0 A4000	£88	£103.40
Storm16 SCSI2 i/f - A300/A400 A5/7000	£96	£112.80
StormDMA32 SCSI2 i/f RPC Phoebe	£128	£150.40
StormPCI UltraWide SCSI i/f (Oct '98)	£199	£233.83
Storm16 SCSI2/10BaseT Ethernet i/f	£148	£173.90
Storm16 SCSI2/10BaseT&2 Ethernet i/f	£196	£230.30

HARD DRIVES (BARE)

120MB A3000/A3010 interface included	£95	£110.45
120MB A3020 fitting kit included	£59	£71.68
120MB A300/A400 interface included	£100	£117.50
500MB A3000/A3010 interface included	£128	£150.40
500MB A3020 fitting kit included	£89	£111.63
500MB A300/A400 interface included	£134	£157.45
210MB 3.5" IDE for A4000 & A5000	£45	£52.88
500MB 3.5" IDE for A4000 & A5000	£55	£64.63
1.2GB 3.5" IDE for RiscPC & A7000/+	£59	£69.33
2GB 3.5" IDE for RiscPC & A7000/+	£85	£99.88
4GB 3.5" IDE for RiscPC & A7000/+	£105	£128.08
100MB 3.5" SCSI	£39	£45.83
500MB 3.5" SCSI	£59	£69.33
2GB 3.5" SCSI	£115	£135.13
3GB 3.5" SCSI	£139	£163.33
4GB 3.5" SCSI	£159	£186.83
6GB 3.5" SCSI	£239	£280.83

EXTERNAL SCSI CASES

for hard drives CD drives & removeable drives
FREE headphones and data cable worth over £20

The unique Combo Case - takes any two SCSI devices & gets rid of all those cables, mains leads etc. Accepts any 5.25" unit.



Acorn M E U 2x CD + free 5.25" slot	£69	£81.08
Case for single SCSI device	£40	£47.00
Combo case for 2 SCSI devices	£60	£70.50

SCANNERS

inc FREE software worth £49

The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageMaster software and TWAIN driver. Free PC interface/software kit (SCSI only). Optional transparency adaptor available.



ScanExpress 6000 parallel	£99	£116.33
ScanExpress 12000 parallel	£119	£139.83
ScanExpress 6000 SCSI	£119	£139.83
ScanExpress 12000 SCSI	£169	£198.58
Scanflat 1200 pro SCSI	£399	£468.83
ImageMaster & Twain	£49	£57.58
Scanflat transparency kit - slides etc	£149	£175.08
ScanExpress transparency kit-slides etc	£75	£116.33
CanoScan 2700F film scanner	£499	£586.33

FIXING KITS, CABLES etc

Podule case for A3000	£16	£18.80
Fixing kits for hard drives	£8	£9.40
A4 IDE hard drive fixing kit	£12	£14.10
A300 series backplane (4 way 4 layer)	£48	£56.40
A7000/+ 1 slot backplane (not with CD)	£34	£39.95
Risc PC 2 slot backplane	£30	£35.25
2nd slice for Risc PC inc 105watt PSU	£99	£116.33
2nd slice for Risc PC	£76	£89.30
SCSI I & II cables choice from	£10	£11.75
SCSI/IDE ribbon cables from	£5	£5.88
SCSI terminator/adaptors (selection)	£10	£11.75
Monitor cable for all Acorn (selection)	£10	£11.75

XTRA HARD DRIVES

Guaranteed 4MB+/sec read transfer rate with Castle Storm DMA32 SCSI card

4GB XTRA 3.5" SCSI	£259	£304.33
6GB XTRA 3.5" SCSI	£339	£398.33
8GB XTRA 3.5" SCSI	£429	£504.08
18GB XTRA 3.5" SCSI	£899	£1056.33

VIDEO HARD DRIVES

Fastest on market - externally boxed and ideal for Video use - StormPCI or Storm DMA32 card recommended

4GB Video SCSI external	£449	£527.58
9GB Video SCSI external	£649	£762.58
18GB Video SCSI external	£1199	£1408.83

CD ROM DRIVES

inc FREE driver software & fixing kit worth £29

Castle Technology's range of CD ROM drives are chosen for their reliability, ease of use and robustness. They have fast access times, and include driver software. They are particularly suitable for multimedia applications.



4x speed SCSI CD ROM drive	£29	£34.08
8x speed SCSI CD ROM drive	£34	£39.95
32x speed SCSI CD ROM drive	£69	£81.08
24x speed IDE CD ROM drive	£45	£52.88
32x speed IDE CD ROM drive	£49	£57.58
40x speed IDE CD ROM drive	£69	£81.08
IDE CD driver for Risc PC & A7000	£25	£29.38
6x4x2 CD ReWriter inc !CDBurn	£325	£410.08
6x4x2 Ext CD ReWriter inc !CDBurn	£389	£457.08
6x2x2 CD ReWriter inc !CDBurn	£280	£316.08
6x2x2 Ext CD ReWriter inc !CDBurn	£340	£351.33
CD ROM fixing kit (data & audio cable)	£4	£4.70

CD TOWERS

7 SCSI CD towers with lockable doors

Add the Castle Technology CD Tower to your network and have simultaneous access to between 7 & 28 CD-ROMs. Enables CD resource discs to remain locked and untouched but accessible from all over the network. Up to 4 towers can be connected to one computer. Fully compatible with Access CD network software.



8x CD 7 drive Tower	£379	£468.83
32x CD 7 drive Tower	£579	£703.83

SPECIAL OFFER!

EXTERNAL 100MB ZIP DRIVE (SCSI OR PARALLEL)

Up to 20 times faster & 80 times the capacity of a standard floppy disc drive, the Zip drive is now an industry standard means of storing and transferring data. Choose between SCSI version (20x faster than floppy) or parallel port version (5x faster than a floppy).



Special limited offer from £99 (£116.33 inc VAT) including FREE driver software 1 FREE 100MB disc

KEYBOARDS MICE ETC

Ergo keyboard for pre Risc PC	£69	£81.08
Ergo keyboard for Risc PC A7000/+ N/C	£39	£45.83
Keyboard for Risc PC A7000/+ N/C	£19	£22.33
Keyboard cable (6 way)	£10	£11.75
Mouse for all Acorns (not A7000 etc)	£12	£14.10
Mouse for A7000/+ N/C Phoebe	£15	£17.63
Mouse balls heavy (pack of 10)	£15	£17.63
Floppy drive any Acorn except A300 A4	£30	£35.25
Replacement floppy drive for A4	£79	£92.83

COMBOS

Full range available - free fitting in combo case when all purchased at the same time

8x CD & 100MB HD - external SCSI	£130	£152.75
8x CD & 500MB HD - external SCSI	£150	£176.25

REMOVABLE DRIVES

- free media with all drives

For flexible, expandable storage, the infinite capacity of a removable drive is perfect. All drives are the latest spec, and internal versions can be fitted into the CT Combo case. Data transfer rate up to 8.8MB/sec (Nomai).



ZIP drive internal 100MB SCSI	£99	£116.33
ZIP drive external 100MB SCSI	£99	£116.33
ZIP drive external parallel not A300 etc	£109	£128.08
Iomega Parallel ZIP driver (100MB)	£25	£29.38
Syquest Flyer 230MB SCSI external	£85	£99.88
MaxIT internal 500MB SCSI drive	£129	£151.58
Nomai internal 750MB SCSI drive	£165	£193.88
Nomai external 750MB SCSI drive	£215	£252.63
JAZ internal 1GB SCSI drive	£189	£222.08
JAZ external 1GB SCSI drive	£199	£257.33
SyJet internal 1.5GB SCSI drive	£219	£240.88
SyJet external 1.5GB SCSI drive	£255	£299.63
JAZ internal 2GB SCSI drive	£360	£423.00
JAZ external 2GB SCSI drive	£410	£481.75
PD 24x CD & 630MB optical SCSI drive	£299	£351.33

NEW NEW NEW!!

40-SPEED IDE CD-ROM DRIVE

The fastest CD-ROM drive available with super-fast access times giving the ultimate in performance.



Special price only **£59** £69.33 inc VAT

MEMORY

A300 & A400 1-4MB	£75	£88.13
A300 & A400 4-8MB	£119	£139.83
A3000 1-4MB	£55	£64.63
A3000 4-8MB	£149	£175.08
A3000 serial port upgrade	£25	£29.38
A3010 1-2MB	£25	£29.38
A3010 1-4MB	£59	£69.33
A3020 & A4000 2-4MB	£35	£41.13
A5000 2-4MB	£60	£57.58
A5000 4-8MB	£139	£175.08
Risc PC A7000/+ 16MB SIMM	£17	£21.15
Risc PC A7000/+ 32MB SIMM	£29	£29.38
Risc PC A7000/+ 64MB SIMM	£93	£109.28
Risc PC 2MB VRAM	£69	£69.33

PROCESSORS & RISC OS

StrongARM processor	£249	£292.58
Risc OS 3.11 chip set	£25	£34.08
Risc OS 3.11 manual set	£20	£23.50
Risc OS 3.11 hardware upgrade - A300	£20	£23.50
Risc OS 3.7 chip set	£50	£58.75
ARM 610 processor (2nd user)	£69	£81.08
ARM 3 processor for A3000 A300 A400	£99	£116.33

MODEM

56k external inc FREE online time	£89	£104.58

REMOVABLE MEDIA

Zip 100MB media	£8	£9.40
Zip 100MB media (6 pack)	£45	£52.88
Syquest 105MB media	£29	£34.08
Syquest 135MB media	£21	£14.10
Syquest 230MB media	£19	£18.80
Syquest 270MB media	£32	£37.60
MaxIT 500MB media	£29	£34.08
Nomai 750MB media	£38	£44.65
JAZ 1GB media	£58	£68.15
SyJet 1.5GB media	£55	£68.15
JAZ 2GB media	£79	£92.83
PD 630MB media	£18	£21.15
CD 630MB write once media (Pk of 10)	£12	£14.10
CD 630MB re-write media	£12	£14.10

COMPUTER SYSTEMS

£200 worth of FREE software

CT supply the full range of Acorn systems including the latest release – Phoebe. We offer special prices which include generous free software packages and the acclaimed Castle Technology technical support helpline.



A7000+ 14" 1GB 24xCD 8MB	£769	£938.83
RiscPC 14" 1GB 24xCD 22MB	£999	£1173.83
Storm RiscPC 14" 4GB 32xCD (fast)	£1299	£1526.33
Phoebe 2100 36MB 32xCD	£1499	£1761.33

COLOUR MONITORS

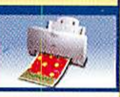
3 year warranty on all monitors (1 year on AKF18)

ACORN AKF18 14" - pre RiscPC	£99	£116.33
14" SVGA	£85	£111.63
15" digital SVGA	£99	£139.83
17" digital SVGA	£165	£198.58
15" digital SVGA Iiyama	£159	£186.83
17" digital SVGA Pro 0.25 Iiyama	£329	£386.58
21" digital SVGA Iiyama	£729	£856.58
14" colour LCD display (TFT Analogue)	£799	£938.83

INKJET PRINTERS

inc FREE data cable & Acorn driver WORTH £20

Advanced inkjet technology for bright colour images & fast printing times. Up to 720dpi resolution (near photographic quality). Supplied with Acorn drivers & data cables.



CANON BJC-80	£149	£175.08
CANON BJC-250	£84	£98.70
CANON BJC-4300	£105	£123.38
CANON BJC-4650	£227	£266.73
CANON BJC-620	£179	£210.33
EPSON Stylus colour 300	£109	£128.08
EPSON Stylus colour 400	£115	£139.83
EPSON Stylus colour 600	£149	£175.08
EPSON Stylus colour 800	£219	£257.33
Parallel printer cable	£10	£11.75
Turbo driver for above printers	£45	£52.88
Acorn printer driver for any listed printer	£10	£11.75
TCP/IP (LPR) postscript printer driver	£175	£205.63

SPECIALS

DOA warranty only

JP150 sheet feeder	£10	£11.75
Master 128 motherboard	£10	£11.75
German keyboards RiscPC/A7000 etc	£10	£11.75
A5000 Power Supply Unit	£15	£17.63
SJ Econet Bridge	£20	£23.50
Acorn Econet interface	£5	£5.88
SJ Econet starter kit	£20	£23.50
PC card for A3000 A3010 A3020 A4000	£99	£116.33
Startwrite wordprocessor	£5	£5.88

DELIVERY CHARGES - Next day insured

Orders over £200 paid by debit card	FREE	FREE
Small items	£6	£7.05
All other orders	£11	£12.93
Fitting charge (inc collection)	£18	£21.15

We welcome payment by cheque (allow 5 days to clear), Credit and Debit cards.

EDUCATIONAL ORDERS WELCOMED.

CASTLE TECHNOLOGY, Ore Trading Estate
Woodbridge Road, Framlingham, Suffolk IP13 9LL
TEL: 01728 621222 FAX: 0800 783 9638

Sales lines open Monday to Friday 9.00am till 5.00pm
Saturday 10.00am till 1.00pm

Contact us by e-mail: sales@castle-technology.co.uk
Visit our web site! http://www.castle-technology.co.uk

All trademarks acknowledged.
E&OE.
All products carry a full 1 year warranty unless otherwise stated.

FREEFAX 0800 783 9638 **PHONE 01728 621222** **FREEFAX 0800 783 9638** **PHONE 01728 621222**

CONTENTS

December 1998

• features



Published by

tau PRESS

Media House, Adlington Park, Macclesfield SK10 4NP
e-mail enquiries@acornuser.com
http://www.acornuser.com/
Tel: (01625) 878888 Fax: (01625) 850652
Printed by Apple Web Offset, Warrington

Editor Steve Turnbull
Art Editor Alan Jones

Contributors
Dave Acton, Ian Burley, Nobilangelo Ceramalus, Mike Cook, David Dade, Dave Lawrence, Steve Mumford, Jill Regan, Steve Scott, Mark Taylor, Mike Tomkinson, Pam Turnbull, Nick van der Walle, Paul Wheatley

Account Manager John Snowden
Ad Production Steve Scott
Production Manager Alan Jones
Circulation Director Darren Whiteman
Distribution COMAG (01895) 444055
Managing Director Steve Turnbull

Subscriptions:
Database Direct 0870 6060424
E-mail: dbscot@globalnet.co.uk
13 issue subscription rate: £39.99 (UK), £53.99 (EU), £68.99 (World)

Acorn User is available as speech from the Talking Newspaper Association UK

• regulars

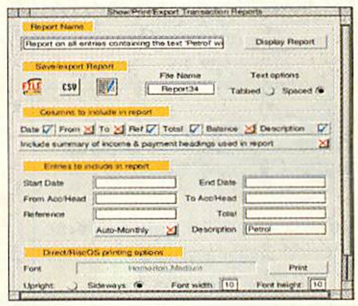


Subscription Offers
Take advantage of our fantastic offers on page 78

• hands on

• reviews





SAVE 25% ON ANGLIA's ANCIENT GREEKS CD-ROM
See page 60 for further details

• education

Next month in Acorn User
- Portable money management
- How to write Java
- Using a touchpad
- Zip Plus and whole lot more

On sale 26 November 1998

CTA DIRECT

See us at Acorn Midlands & Scotland

Curriculum Training Associates
Dept. AU12, 168 Elliott St.
Tyldesley
Gtr Manchester
M29 8DS

EMAIL: sales@cta.u-net.com http://www.cta.u-net.com **Tel: 01942 797777** Fax: 01942 797711

CTA DIRECT ARE NOW *INTERNET SERVICE PROVIDERS*

We can offer Domain names, registration and maintenance, web design, virtual server, secure server, Web server housing, Web & FTP space.

Introductory special offers

***1 extra Free months Access ***
*** with all packs ***

1 years unlimited access for £99inc vat
33K Modem and 1 yr. for £99 (£116.33)
56K V90 Modem + 1yr £125 (£146.88)

*** XMAS OFFER*** *FREE Internet connection* worth £99 inc 5mb webspace & 5 E-Mail accounts, on all new systems.

IDE HARD DRIVES AND SUB-SYSTEMS *WHY PAY MORE???*

A3000/A3010 Hard drives

	Ex. VAT	Inc. VAT
Internal 85/120 Mb	£ 99	£116.33
Internal 170 Mb	£109	£128.08
Internal 340 Mb	£129	£151.58
Internal 512 Mb	£139	£163.33
Internal 850 Mb	**£149**	**£175.08**
Internal 1 Gb	£159	£186.83
Internal 2 Gb	£169	£198.58
Internal 3 Gb	£179	£210.33

External A3000 add £20.00 +VAT
includes CD ROM interface

A3020 Hard drives

	Ex. VAT	Inc. VAT
85Mb	£49	£57.58
170Mb	£59	£69.33
340Mb	£79	£92.83
512Mb	**£89**	**£104.58**
850 Mb *	£149	£175.08
1 Gb *	£159	£186.83
2 Gb *	£169	£198.58
3 Gb *	£179	£210.33

* includes CD ROM interface For partioning software only deduct £25.00 + vat (29.38)

A4000/A5000/A400

	Ex.VAT	Inc. VAT
420Mb *	£76	£89.30
540Mb *	£85	£99.88
700Mb *	£93	£109.28
1.2Gb	*£115	£135.13
2.1Gb	*£125	£146.88
3.2Gb	*£135	£158.63
4.0Gb	*£145	£170.38

* inc. internal removable HD & CD ROM i/f
For partioning software only deduct £25.00 + vat (29.38)

RPC 1&2/A7000

	Ex. VAT	Inc. VAT
512Mb	**£59**	**£69.33**
1.2Gb	**£70**	**£82.25**
1.7Gb	£75	£88.13
2.1Gb	£80	£94.00
3.2Gb	£90	£105.75
4.3Gb	**£99**	**£116.33**
6.4Gb	£110	£129.25
8.4Gb	£135	£158.63
13.6Gb	£200	£235.00
16.8Gb	£290	£340.75

233Mhz RiscPC Offers

e.g. RPC SA 2M+32Mb/2.1G/32x CD & 17" monitor for only **£1125 + VAT**

RPC SA base models from **£854** inc VAT
AND we will match or beat your best offer

CD-ROMS

	IDE internal	IDE external	SCSI internal	SCSI external
32 x	£45.00 (£52.88)	£99.00 (£116.33)	£70.00 (£82.25)	£125.00 (£146.88)
24 x	£39.00 (£45.83)	£95.00 (£111.63)	£60.00 (£70.50.)	£115.00 (£135.13)
16 x	£34.00 (£39.95)	£89.00 (£104.58)	£40.00 (£47.00)	£95.00 (£111.63)
12 x	£34.00 (£39.95)	£89.00 (£104.58)	£34.00 (£39.95)	£90.00 (£105.75)
8 x	£30.00 (£35.25)	£84.26 (£99.00)	£30.00 (£35.25)	£84.26 (£99.00)

EXTERNAL IDE REQUIRE SUITABLE I/F (3.5 driver £15+ vat) IDE int. fitting kit £5 inc.

EXT SCSI includes SCSI I cable, SCSI II cable £5 (£5.87) extra. SCSI fitting kits from £10 + vat

SCSI HARD DRIVES

540M (limited Stock)	£65.00	(£76.38)
1.0Gb	£75..00	(£88.13)
2Gb	£115.00	(£135.13)
2Gb (7200rpm)	£130.00	(£152.75)
4.3Gb (5400 or 7200rpm)	£150.00	(£176.25)
4.3Gb (10,000rpm)	£255.00	(£299.63)
9.1Gb (7200rpm)	£300.00	(£352.50)
18.6Gb 7,200rpm	£749.00	(£880.08)

Phoebe
RISC PC 2

☆Reserve yours for only £100 inc. "Phoenix" under negotiation.. call for latest details.

A7000+ System Offers

A7000 +16M / 1.7G / 16xCD /15" mon & Stereo Spk for only £799 ex. VAT
Please ask for other combinations

REMOVABLE HARD DRIVES
Panasonic PD / CD-ROM from £139.00 + Vat

	IDE internal	IDE external	SCSI internal	SCSI external	Parallel PC /Mac	Parallel ACORN
Zip 100	£69.00 (£81.08)	£129.00 (£151.58)	£100.00 (£117.50)	£100.00 (£117.50)	£100.00 (£117.50)	£115.00 (£135.13)
Ezflyer 230					£80.00 (£94.00)	£130.00 (£152.75)
Nomai 750			£165.00 (£193.88)	£215.00 (£252.63)		
Jaz 1Gb			£189.00 (£222.08)	£199.00 (£233.83)	£224.00 (£263.20)	£249.00 (£292.58)
Syjet 1.5G	£219.00 (£257.33)	£269.00 (£316.08)	£219.00 (£257.33)	£269.00 (£316.08)	£279.00 (£327.83)	£279.00 (£327.83)
Jaz 2Gb			£265.00 (£311.38)	£265.00 (£311.38)	£294.00 (£345.45)	£324.00 (£380.70)

** REMOVABLE IDE REQUIRE SUITABLE INTERFACE . EXTERNAL SCSI INCLUDE SCSI 1 CABLE , SCSI II CABLE £5.00 +VAT EXTRA

MONITORS Sale now on

	Ex. VAT	Inc. VAT
14" SVGA 0.28 (3yr on-site)	£89.00	£104.58
14" SVGA 0.28 Multi-Media	£110.00	£129.25
15" SVGA 0.28 (3yr on-site)	£110.00	£129.25
15" SVGA 0.28 Multi-Media	£129.00	£151.57
17" SVGA Home Multimedia	**£160.00**	**£188.00**
17" SVGA 0.28 (3yr on-site)	**£200.00**	**£235.00**
17" SVGA 0.25 (3yr on-site)	**£300.00**	**£352.50**
17" Multisync (17" AKF50)	**£300.00**	**£352.50**
17" Iiyama Pro	£340.00	£399.50
19" SVGA 0.26 (3yr on-site)	**£400.00**	**£470.00**
20" SVGA 0.28 (Special)	**£300.00**	**£352.50**
21" SVGA 0.25 (3yr on-site)	**£595.00**	**£699.13**
21" Iiyama Pro (A101GT)	£759.00	£891.83
21" Iiyama Pro (A102GT)	£820.00	£963.50
AKF18/2 Multisync	**£115.00**	**£135.13**
AKF53 Multisync (14")	**£165.00**	**£193.88**
AKF50 Multi-sync (14")	**£199.00**	**£233.83**
Multisync A300/3000 cable	£8.50	£9.99

Removable Drive Media

	Ex. VAT	Inc.VAT
100mb Zip	£8.45	£9.93
Zip 5 pack	£38.30	£45.00
120mb LS120	£7.50	£8.81
135 Syquest	£21.00	£24.68
230 Syquest	£19.90	£23.38
270 Syquest	£29.75	£34.96
650Mb Pan. PD	£19.00	£22.33
750Mb Nomai	£38.00	£44.65

	Ex. VAT	Inc.VAT
1Gb Jazz	£58.00	£68.15
1.5Gb Syquest	£58.00	£68.15
CDR CD-ROM	£1.28	£1.50
CDR 10 pack	£10.00	£11.75
CDR 25 pack	£21.28	£25.00
CDR/W CDROM	£12.00	£14.10
CDR/W 10 pack	£100.00	£117.50

Interface Adapters

Storm SCSI 8 bit (A30x0 int)	£88.00	£103.40
Storm SCSI 16 bit (podule)	£96.00	£112.80
Storm SCSI 32 bit (podule)	£128.00	£150.40
Powertec SCSI3 32 bit (Pod)	£155.00	£182.13
Simtec 8 bit (A3000/A3010)	£55.00	£64.63
Simtec 16 bit (AX00/A5000/RPC)	£45.00	£52.88
APDL (ICS)16 bit DMA	£46.81	£55.00
RapIDE32	£119.00	£139.83

Removable IDE or SCSI Housing Unit £20.00 (£23.50)

COLOUR SCSI SCANNERS

P'llel A4 600dpi inc Acorn s/w	**£99.00 (£116.33)**
Mustek A4 600 dpi inc Acorn s/w	**£119.00 (£139.83)**
Mustek *A4 1200 dpi* inc Acorn s/w	***£169.00 (£198.58)***
Imagemaster & Twain for above	£49.00 (£57.58)
Epson p'llel A4 600dpi inc Acorn s/w	**£170.00 (£199.75)**
Epson SCSI A4 600dpi inc Acorn s/w	**£229.00 (£269.08)**

6 Drive CD-ROM SCSI Towers

8x £299.00 exc.
16x £399.00 exc.
32x £549.00 exc.

StrongARM Special Offer

£259.00 inc VAT
(with any Hard Drive / Memory purchase)

THE BEST! PRINTER PRICES

(Please ring for latest prices)		Ex. VAT	Inc. VAT
Canon BJC80W portable col.		£159.00	£186.83
Canon BJC 250 **colour**	A4	£84.00	£98.70
Canon BJC 4300 colour#	**A4**	**£110.00**	**£129.25**
Canon BJC 4650 colour#	**A3**	**£227.00**	**£266.73**
Canon BJC 7000 colour#	**A4**	**£189.00**	**£222.08**
Epson Stylus 440 colour	A4	£120.00	£141.00
Epson Stylus 640 Colour	**A4**	**£148.00**	**£173.90**
Epson Stylus 850 Colour	A4	£230.00	£270.25
Epson Stylus 1520 Colour	A3	£499.00	£563.87
Epson Stylus photo 700 #	A4	£180.00	£211.50
Epson Stylus Photo EX #	A3	£330.00	£387.75
HP 420	**A4**	**£75.00**	**£88.13**
HP 670C Colour	A4	£102.00	£119.85
HP 690C Colour	A4	£110.00	£129.25
HP 690C Colour PLUS	A4	£119.00	£139.83
HP 890C Colour	A4	£217.00	£254.98
HP 895CXI Colour	A4	£225.00	£264.38
HP LASERJET 6L		**£249.00**	**£292.58**
HP LASERJET 6P		£494.00	£580.45
Photo drivers for #		**£58.72**	**£69.00**

FREE Acorn driver by request

FLOPPY DISKS @20p !!

	Ex. VAT	Inc.VAT
DD Re-label Acorn fmt 10 pk	£2.00	£2.35
DD Re-label Acorn fmt 100 pk	£17.02	£20.00
DD Branded box10 pack	£2.50	£2.94
DD Branded box 10x	£21.28	£25.00
HD bulk Acorn or PC 10 pack	£2.00	£2.35
HD bulk Acorn or PC 100 pack	£17.02	£20.00
HD Branded 10 pack	£3.50	£4.11
20 cap Disk Box	**£1.69**	**£2.00**
40 cap Disk Box	**£2.54**	**£2.98**
100 cap Disk Box	**£2.98**	**£3.50**
3.5" Floppy head cleaners	**£2.50**	**£2.94**
CD-ROM lens cleaner	**£4.25**	**£4.99**

Printer Ribbons, Inkjet Cartridges, New/Recycled Laser Toner Carts
Prices available on request

CD-ROM WRITERS



Prices Start from £185.00 +

2x6x Writer	£185.00 (£217.37)
2x2x6x Re-Writer	£230.00 (£270.25)
4x2x6x Re-Writer	£249.00 (£292.58)
CD-BURN for above	**£50.00 £58.75**

POWERED SPEAKERS

	Ex. VAT	Inc. VAT
60 watts with PSU	£16.98	£19.95
240 watts with PSU	**£24.68**	**£29.00**
Subwoofer system with PSU	£42.00	£49.35
Comms System Mic/Headphones	£8.50	£9.99

Digital Cameras

	Ex VAT	Inc VAT
QV11a (PC Software)	£170	£199.75
QV11a (Acorn SW)	£260	£305.50
Qv11a/Qv100 s/w kit	£96	£112.80

Casio QV100a Digital Camera

PC s/w only £200.00 exc vat (£235)
Acorn & PC s/w £290.00 exc. (£340.73)

We can repair/upgrade your machine(s) and monitors at competitive prices please ask
All Acorn's including BBCs & PCs

3 yr Warranty on ALL Acorn MEMORY *why Pay More??*

ACORN MEMORY NEW PRICES

	Ex. VAT	Inc. VAT
4-8 MB Up. (A310,440,3000*) ⇓	£99	£116.33
4-8 MB Up. (A5000*) ⇓	£119	£139.83
*rework for A3000/5000/25mhz	£25	£29.38
A3010 1-2 MB Upgrade ⇓	£25	£29.38
A3010 2-4 MB Upgrade (exch) ⇓	£45	£52.88
A3010 1-4 MB Upgrade ⇓	£55	£64.63
A3020/4000 2-4 MB Upgrade ⇓	£40	£47.00
A5000 2-4 MB Upgrade ⇓	£45	£52.88
A3000 1-2 MB Non-Upgrade	£20	£23.50
A3000 2-4 upgrade (exchange) ⇓	£45	£52.88
A3000 1-4 MB Upgrade ⇓	£55	£64.63
A3000 Serial Port Upgrade	£23	£27.03
A310 4Mb Upgrade ⇓	£50	£58.75
A400/1 1Mb Upgrade per meg ⇓	£25	£29.38
Risc OS Carrier Board (A310)	£19	£22.33
MEMC 1A upg (short supply)	£45	£52.88
NEW A540 4Mb ⇓	£97	£113.98

RISC PC MEMORY

Also FOR A7000	Ex. VAT	Inc. VAT
8Mb SIMM	£10.00	£11.75
16Mb SIMM	£17.00	£19.98
32Mb SIMM	**£29.00**	**£34.08**
32Mb High Clearance	**£39.00**	**£45.83**
64Mb SIMM	**£100.00**	**£117.50**
128Mb SIMM	**£212.00**	**£249.10**
1Mb VRAM	£38.30	£45.00
2Mb VRAM	**£76.00**	**£89.30**
1-2 Mb (exchange)	£66.00	£77.55

PHOEBE MEMORY

32Mb SDRAM	**£29.00**	**£34.08**
64Mb SDRAM	**£65.00**	**£76.38**
128Mb SDRAM	**£120.00**	**£141.00**

30/33 Mhz Arm 3 upgrade

with FPA socket	⇓**£115.00 inc**
with FPA 10 fitted(25Mhz)	**£165.00 inc**

NETWORKING

ETHERNET INTERFACES

All ethernet i/fs etc are ANT	Ex. VAT	Inc. VAT
A3000 int 10base2 or T , Access+	£89.00	£104.58
A400 / A5000 10base2 or T Acc+	£89.00	£104.58
A400 / A5000 10base2 & T Acc+	£99.00	£116.33
A3020 10base2 Access+/ext MAU	£99.00	£116.33
A3020 10baseT Access+/ext MAU	£99.00	£116.33
RiscPC/A7000 10base2 or T Acc+	£89.00	£104.58
RiscPC/A7000 10base2 & T Acc+	£99.00	£116.33

Cables

2M	£4	£5.29
3M	£6	£7.05
5M	£7	£8.23
10M	£11	£12.93
20M	£15	£17.63

State 10base2 or 10baseT

Premier Quality Ink Refills

Single refills	(1x22ml)	£6.00 inc
Twin refills	(2x22ml)	£10.00 inc
Triple refills	(3x22ml)	£14.00 inc
Tri- Colour	(C.M.Y)	£15.00 inc
Quad-Colour	(C.M.Y.K)	£20.00 inc
125 ml		£21.00 inc
250ml		£38.00 inc
500ml		£50.00 inc
1 litre		£70.00 inc

All sizes available in C,M,Y,K

Desktop FAX MODEMS

33600 Voice BABT approved	£40.00	**£47**
56k x2 / V90 3Com USR	£118.30	**£129**
56k Flex /V90 (Rockwell)	**£58.72**	**£69**
ISDN modem (external)	**£169.36**	**£169**
High speed serial cards from	£78.30	**£92**

ArcFAX £31 inc , Ant Inet £110.51 inc

RiscPC PC Cards

DX2-66	**£149.00 inc VAT**
DX4-100	£233.99 inc VAT
586-100 (Acorn)	£350.99 inc VAT
586-133 (CJE 512)	**£350.00 inc VAT**

MICE & KEYBOARDS

	Ex. VAT	Inc. VAT
Acorn Trackball/Mouse *NEW*	**£29.79**	**£35.00**
Acorn Original Mouse	£25.00	£29.38
Acorn Replacement Mouse	£12.00	£14.10
Acorn **ERGO** Mouse *NEW*	£12.00	£14.10
A7000 Logitec Mouse	**£15.00**	**£17.62**
Ergo (std) RiscPC Keyboard	**£21.28**	**£25.00**
Ergo curved RiscPC K/board	**£29.79**	**£35.00**
A400/A5000 replacement k/brd	£69.00	£81.08

ARCSHARE Acorn networking for PCs £29.95 exc Vat £35.19 inc Vat see network section for Cards ETC.

NEW DEALS

ACORN TRACKBALL & MOUSE £29.79 + VAT





High Quality Acorn ERGO mouse £12.00 + VAT

Replacement Floppies
A3000/400/500 floppy £29.00+vat (£34.08)

A30X0/4000/5000 floppy allows cross -formatting of HD and DD discs £29.00+vat (£34.08)

RiscOS 3.11 upgrades
£25.00 exc Vat (£29.38)



Quake £33.00



For all 8Mb machines
Only £27.00 INC VAT



DOOM TRILOGY
£32.50 Inc. FREE Doom Secrets book.

(All Prices below include VAT) THE BARGAIN BASEMENT Most Items will be at Acorn Shows

Acorn Software Bin

10/10 Dinosaurs	£11.75
A3010 Joystick Controller Software	£15.00
Acorn Pocket Book..Schedule	£10.00
Acorn Pocket Book..A-link Upgrade ????	£10.00
Alone in the Dark	£29.00
Aries (4 game pack)	£20.00
Arm Tech Labeller	£9.00
Beebug Hard Drive Companion	£5.00
Birds of War	£20.00
Boxing Manager	£8.00
Christmas Clipart SG010	£10.00
ColourSep (Colour Seperation Software)	£8.00
Creater 2	£25.00
D'File Font Pack (Academy)	£10.00
D'File Font Pack (Balmoral)	£10.00
D'File Font Pack (Commercial Script	£10.00
D'File Font Pack (FreeStyle Script)	£10.00
D'File Font Pack (Manhattan)	£10.00
D'File Font Pack (Mastercard)	£10.00
D'File Font Pack (Old Towne 536)	£12.00
DeskEdit	£10.00
Desktop Database	£15.00
DeskTop Thesaurus	£14.00
Diary +	£9.00
Drifter	£30.00
Easi Word	£8.00
EasyFont3	£24.00
FIRE and ICE	**£15.00**
Font Pack 1 (2 Disc Set)	£10.00
Font Pack 2 (2 Disc Set)	£10.00
FRAK (for RPC and A7000) NEW	£14.00
Galactic Dan	£10.00
Game ON (for RPC)	£15.00
Global Effect	£25.00
Guile	£10.00
HERO QUEST	**£15.00**
Imagery Art Package	£25.00
Impression Borders Discs 80 Chinese	£10.00
Impression Borders Discs 80 Old Engl.	£10.00
Jahangir Khan Squash	£8.00
KV (Platform Game)	£8.00
My World Support Disc Ancient Egypt	£12.00
My World Support Disc Ancient Greece	£13.00
Nuclides II and Elements II	**£25.00**
Quest for GOLD	**£8.00**
Revelation 2	£29.00
SilverBall	£10.00
Start Write	**£8.00**
StrongGuard	**£25.00**
Swiv (Budget Title)	£9.00
Visual Backup	£18.00
World Class Leaderboard (GOLF)	£10.00
Zool (on HD)	£10.00

Acorn CD-ROM Software

Acorn Replay CD (back in Stock)	£5.00
D'File PDCD 1,2,3 or 4	£5.00
D'File PDCD 5	£10.00
Hutchinson Encyclopedia	£39.00
Image warehouse	£20.00
TopicArt CD	**£10.00**
YITM Electricity and magnetism	**£15.00**
YITM Elements	**£15.00**
YITM Materials	**£15.00**
YITM (all three titles)	**£35.00**

1/2 price (or less) Book Bargains

Dabhand Guide "Buget DTP"	£3.00
Dabhand Guide "C" ver 3	£8.50
Dabhand Guide "C" ver 2	£3.00
Dabhand "Graphics on the ARM	£7.50
Dabhand Guide "Impression"	£7.50

2nd User Acorn Software

Compression	£6.00
Hearsay II	£15.00

Various Hardware bargains

A3000 bases from	**£85**	**£99.88***
A3010 bases from	**£100**	**£117.50***
A3020 bases from	**£125**	**£146.88***
A4000 bases from	**£150**	**£176.25***
A5000 bases from	**£250**	**£293.75***
RPC bases from	**£468**	**£549.90***
Monitors Various	**POA**	**POA**
Panasonic PD scsi system int	£139.00	£163.33
Panasonic PD scsi system ext	£199.00	£233.83
Pioneer SCSI 4x 6x stack ext	£169.00	£198.58
Syquest 1.5G p'll port PC only	£169.00	£198.58

Oddments

Mouse pads from	**£0.85**	**£1.00**
STAR LC10/20/100 colour ribbon	**£5.00**	

PC Utilities & Languages (on CD ROM (inc vat)

Incontext Web Analyser	£10.00
Incontext Web Spider	£10.00
LOTUS SMARTSUITE 97 FOR WIN 95	**£25.00**
MICROGRAFIX DESIGNER	£25.00
MS WORKS V2.0 (Win 3.1 or 95)	£10.00
MS WORKS V4.0	£25.00
Photo Album maker	£10.00
Photo Calendar maker	£10.00
TURBO CAD	£15.00

PC CD Business Tiltles

COREL DRAW V4.0 CD	£20.00
DATA CAD V5.0	£20.00
Professor WINDOWS 95 (TUTOR)	£10.00

CD Education / Multimedia/ Kids Titles for PC

3D Body adventure	£10.00
FUN SCHOOL 5 (dreamland)	£10.00
FUN SCHOOL young scientist	£10.00
GLOBAL FRENCH	£10.00
GCSE maths 97/98 curriculum	£15.00
KIDS CAD	£10.00
Kids Zoo & 3D Dinasaurs	**£10.00**
MATHS BY COLOURS	£10.00
MS FINE ARTIST	£10.00
SHOW & TELL (inc. free calculator)	£15.00

CD Multimedia /Reference Titles for PC

3D Garden Designer	£15.00
Androute Routerfinder for UK	£10.00
Atlas of Great Britain (Ordinance Survey)	£15.00
HOME GARDNER CD	£10.00
MS BASKET BALL	£10.00
MS BOOKSHELF 94	£8.00
MS CINEMANIA 94	£8.00
MS CINEMANIA 95	£10.00
MS DANGEROUS CREATURES	£15.00
MS ENCARTA 96 OEM	£15.00
MS Encarta 98 Encyclopedia	**£40.00**
MS JULIA CHILDS HOME COOKING	£10.00
MS MUSIC CENTRAL	£10.00
MS Magic School Bus	£15.00
ROUTE 66 (UK and Ireland)	**£15.00**
VISIONS OF MARS CD	£10.00

CD Anglia Multimedia Reduced to clear

Nelson and his Navy	**£15.00**
Romans	**£15.00**
Understanding the Body	**£15.00**

CD General Resource Titles

	Ex. VAT	Inc. VAT
35,000 Clip Art (WMF)		£20.00
75,000 Clip Art (WMF) & images		£25.00
COREL ARTSHOW 5		£29.00

Alone in the dark	£10.00
Angel Devoid (4 cd MEGA game)	£15.00
DOOM II SECRETS book	£10.00
EA COMPILATION CD (10 GAMES)	£10.00
HERETIC (shadow of the serpent riders)	£10.00
LITTLE BIG ADVENTURE	£10.00
LOOM	£10.00
MAGIC CARPET	£10.00
MS GOLF V2	£15.00
MS HIVE	£10.00
NASCAR RACING	£10.00
RAC Rally	**£12.00**
REBEL ASSAULT (Star Wars)	£10.00
SLIPSTREAM 5000	£10.00
STELLAR 7 CD	£10.00
THEME Hospital	£15.00

PC CD-ROMS Buy 2 get one free

20th Century Almanac	£5.00
Busy Town, triple title	£5.00
Critical Path (interative game)	£5.00
Dragon Lore (2 cd games)	£5.00
GUS GOES TO CYBERTOWN	£5.00
HYPERBACKGAMMON	£5.00
Iron Helix	£5.00
MANTIS	£5.00
MARIOS EARLY YEARS	£5.00
MINERVA SHAREWARE	£5.00
NIGHT OWL 18 shareware	£5.00
Quantum Gate (Interactive Game)	£5.00
Quicken for Windows (personal Accounts)	£5.00
RAILROAD TYCOON (Three games)	£5.00
San Diego Zoo , The Animals	£5.00
SOFTKEY ENCYCLOPEDIA	£5.00
Travel Companion	£5.00
U.S. Interactive Atlas	£5.00
Windows 95 (Shareware CD)	£5.00
WORLD ATLAS V5.0	£5.00

PC CD-ROMS Buy 2 get one free

DUNE (the game of the film)	**£10.00**
F117A FLIGHT SIM/ Phantom of the Opera	£10.00
FIFA SOCCER	£10.00
FX FIGHTER	£10.00
KINGS QUEST VII CD	£10.00
Lord of the Rings	£10.00
MANTIS + Civilisation	£10.00
MS GOLF	£10.00
Read with Me 1& 2 / Memphis Maths	£10.00
SIM ISLE	**£10.00**
UNDERSEA ADV/ SPEED/ SPACE	£10.00

Alternative PC Bases Pentium

from ONLY £249.00 + ring for latest prices.

HOW TO ORDER

BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.

CREDIT CARD / SWITCH please give name, address, tel. no, card no, expiry date, issue no. *if any.*

BY EMAIL: sales@cta.u-net.com

OFFICIAL ORDERS by MAIL or FAX

Carriage charges inc. ins. & packaging charged at cost

Small items (under 2Kg)..........no more than £6 + vat

One box of items totalling upto 25kg.............£6 + vat

Computer systems..£12 + vat

All prices are correct going to press. E&OE

All goods are guaranteed but not supplied on approval

Acorn axes pro

75 jobs go... Phoebe project cance

During what is now being referred to as Black Thursday, September 17th, just a week after the November edition of *Acorn User* went to press, the London stock market was told, with immediate effect, that Acorn was closing its Workstation Division. Chris Cox, who headed up the division, his newly recruited sales and marketing team, plus 70 other, mainly administrative, staff were made redundant, reducing Acorn's staff head count to approximately 100.

Stan Boland, Acorn's newly-appointed CEO, justified the move because Acorn's future security lay in focussing sharply on two specific markets – thin client terminals and digital TV technology. Producing computers for schools and enthusiasts was both a technical and financial distraction as well as a corporate one. This was effectively seen as the end of Acorn in the personal computer market – initially at least. Although corporate Acorn is adamant that its decision is irreversible, the signs are now more optimistic that the current production range and even Phoebe have a future after all, but outside the direct auspices of Acorn PLC.

Ironically, it was the looming launch of Phoebe, the successor to the Risc PC, which served as the catalyst for its own demise. Despite the fact that Phoebe was just a few weeks away from its first production build and several million pounds had already been spent on its development, Boland apparently regarded Phoebe as too big a risk. Although the Workstations Division was the only profitable part of Acorn, Phoebe would have required a great deal of Acorn's resources to launch successfully and support. Instead, Boland decided to pre-empt what was seen as the inevitable future failure of the Acorn products market altogether and so do away with the administrative overhead of supporting a complicated product dealership now, rather than later.

Initially, there were fears that not only was Phoebe lost, but the established products would cease to be available once warehouse stocks were depleted. After the

Two decades of Acorn

1979 Chris Curry and Hermann Hauser left Sinclair Computers to form Acorn Computers in cramped offices in the centre of Cambridge selling an 8-bit 6502-based hex-input kit computer, the System One.

1980 1MHz 6502-based Acorn Atom home computer launched in both kit and ready-assembled form. Colour support arrived soon after.

1981 Acorn scoops the lucrative contract to build a custom computer for the BBC's forthcoming educational computing TV series. 20,000 BBC Micros were expected to be made in all, around one per school. This was an under-estimation to the factor of 50x as it turned out.

1982 The BBC Micro, sporting a faster 2MHz version of the Atom's 6502 chip was launched with the basic 16K 'A' model costing just over £300. The full-spec £400 32K Model B proved to be the favourite, over a million were produced and production ran for over ten years. The BBC B guaranteed Acorn's long term survival through dominance in the schools market.



1983 Cheaper, slower version of the BBC Micro, the Acorn Electron, launched but its over-high £199 price plus downturn in personal computer market means it's a flop. Of the 100,000 produced – as much as one third remained unsold.

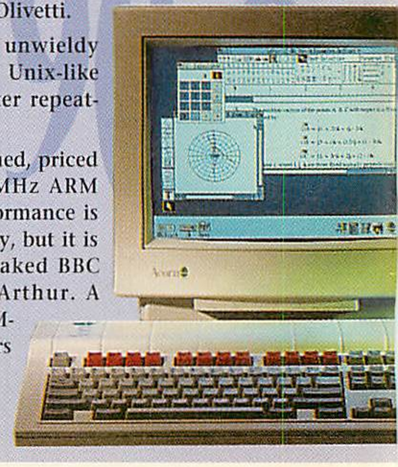
1984 ABC business machine project launched, but is quickly cancelled after poor market interest.

1984 Acorn rejects a 16-bit off-the-shelf replacement for the trusty 8-bit 6502 processor and decided to design and make their own 32-bit RISC processor, the ARM (Acorn RISC Machine).

1985 Acorn nearly goes bust, but is saved by Olivetti, who take a majority stake. Founders Curry and Hauser leave, the latter taking up a research position within Olivetti.

1987 ARX, an ambitious and unwieldy but potentially powerful Unix-like OS project cancelled after repeatedly missing deadlines.

1987 The Archimedes is launched, priced from £699. With its 8MHz ARM RISC processor, raw performance is astonishing for the money, but it is launched with a half-baked BBC Micro-like OS, called Arthur. A quarter of a million ARM-based personal computers have been built to date.



ducts business

lled... Acorn World 98 postponed

initial hiatus had subsided, it was clear that Acorn was still willing to manufacture the basic components for existing products as long as there was demand, indeed Acorn could make a good profit from this arrangement now that its administrative overhead was largely gone. It now looks like there is hope for Phoebe too as long as Acorn can be persuaded that an independent party can acquire the project.

However, even if those two suppositions prove to be correct, Acorn won't be involved directly in product marketing and distribution. As we went to press, Castle Technology was looking to forge a deal with Acorn to take over dealer distribution responsibilities from Acorn. Acorn and Xemplar also announced that Xemplar would continue to market and supply Acorn products to the education market.

Meanwhile, a large group of various interested parties, including software and hardware developers as well as dealers, has formed a steering group headed by former Acorn director, Peter Bondar, to form a company whose aim is to secure the rights to all current Acorn products and related technologies as well as the Phoebe project.

A leading light in this group, which has assumed the informal tag of 'Project Phoenix' is Robert Todd, who runs a Scottish dealership and is the organiser of the annual Scottish Acorn show. Todd told *Acorn User* that he is confident that if Stan Boland is willing, the financial arrangements can be made and there are no technical surprises, Phoebe can be built in time for first supplies to be shipped by Christmas. Peter Bondar concurred with this view.

Acorn has to decided if the Peter Bondar-led initiative can have the businesses, lock, stock and all or if it will decide to opt for the Castle Technology distribution route. And where would this leave Xemplar?

Exactly how the relationship between these leading players in the Acorn products business' future will pan out was far from decided as we went to press. However, the emphasis is on speed and it's expected that a decision may have been reached by the time this issue of *Acorn User* is published.



1988 At last, Acorn provides a half-decent graphical operating system for the Archimedes – it's called RISC OS, but only features co-operative multi-tasking.

1991 Acorn launches the A4 notebook which is based on Archimedes A5000 innards housed in an Olivetti/Triumph Adler notebook case.

1991 ARM RISC technology spun off as the independent subsidiary, Advanced RISC Machines Ltd (ARM Ltd). Unusually, there is backing from Apple who were interested in using ARM chips in their Newton PDAs. Acorn and Apple each have 43 percent share, with chip-maker VLSI Technology holding the rest.

1994 Acorn announces the Risc PC to replace the A5000 – features dual processor architecture to host both an ARM processor for RISC OS and a 486-compatible processor for Microsoft compatibility. Also features modular 'slice' case design. Almost 50,000 have been produced to date.

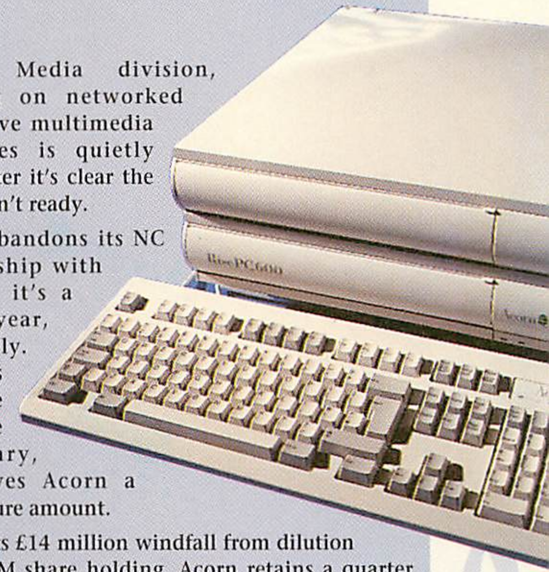
1995 Acorn succeeds in persuading Oracle that it is capable of producing the first low-cost Network Computer (NC) reference platform designs. Acorn optimism reaches new heights.

1996 Once again Acorn gets into bed with Apple, this time forming Xemplar, a distribution company jointly promoting Acorn and Apple computers for the schools market in the face of ever growing PC competition.

1996 Risc PC gets Digital-made 200MHz StrongARM upgrade – in just two years the Risc PC is almost ten times faster.

1997 Online Media division, focusing on networked interactive multimedia TV boxes is quietly closed after it's clear the market isn't ready.

1997 Oracle abandons its NC relationship with Acorn – it's a bad year, financially. Rumours indicate Oracle subsidiary, NCI, owes Acorn a seven figure amount.

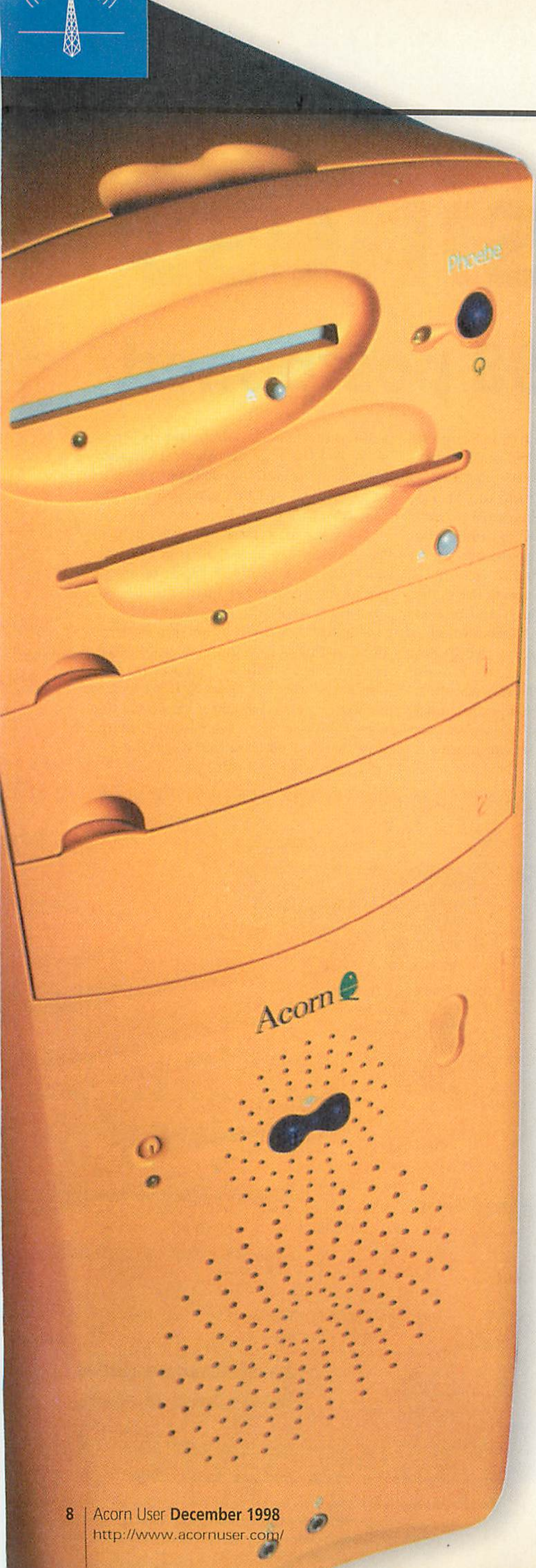


1998 Acorn gets £14 million windfall from dilution of its ARM share holding. Acorn retains a quarter share in ARM Ltd.

1998 ARM Ltd flotation, sees ARM shares hit £10, making the company worth up to $1 billion on paper.

1998 Board room bust up ushers in new Acorn management. A strategic decision is soon made to wind up Acorn's products business in order to concentrate on thin client terminals and digital TV set top box technologies.

1998 The Risc PC's successor, Phoebe, is cancelled within two months of its first projected production run after over £2 million of investment.



Phoebe works

As the shockwave spread from Acorn House in Newmarket Road on September 17th, various negative rumours about its future prospects soon followed. One suggested that the new IOMD2 chip which is central to Phoebe's design was badly bugged and would require an expensive and time-consuming re-design. We were also told that RISC OS 4 was far from finished. These difficulties were said to have been the straws which broke Phoebe's back and hence brought the Workstations Division down with it.

As we revealed last month, we were officially told that Phoebe was going to be a month late anyway. This pointed to some technical problems, but sources which we have a degree of confidence in now suggest that a pre-production Phoebe, with the new IOMD2 chip installed, plus a beta version of RISC OS 4 has been up and running for several weeks and although there are some areas of concern, they are not critical.

For example, super-high resolution screen modes appear to compromise sound quality because of bandwidth limitations involving IOMD2 and the new faster VIDC20 – which incorporates the sound channels. Most of us won't be using these sorts of screen modes and it has been suggested that a PC combo chip, which is included on the Phoebe motherboard, could be a reserve sound generator if required.

It's not certain if IOMD2 problems will mean the PCI bus, which is much faster than the Podule bus, will work properly. However, few PCI-based cards will be available immediately, so this problem may not be considered critical. RISC OS 4 definitely needs some debug time, but in the best of Acorn traditions, a mildly buggy or incomplete RISC OS might be an acceptable price to pay for early customers (who remembers the BBC Micro's version 0.1 OS, or even Arthur for the Archimedes?)

What's more, some early benchmarks have appeared on the Internet, courtesy of Mike Stephens, which confirm that Phoebe really does work and encouragingly well too. Compared to a conventional StrongARM Risc PC, a prototype Phoebe with the same speed processor looks like being typically twice as fast. Some routines which can run inside the StrongARM's cache, like dhrystones, for example, appear to be only marginally faster, but functions which are memory and bus intensive and which can exploit RISC OS 4 improvements can show a spectacular speed increase in the order of 24 to 89 times, according to the benchmarks.

Even if the general improvement is 'only' 2-3 times, that's not bad considering its all down to hardware and OS sub-system improvements. With Intel hinting that 366MHz StrongARMs are on their way, another useful speed increase isn't far away.

Scottish Acorn Computer Show

Despite the difficulties at Acorn and the postponement of the Acorn World 98 show, the 3rd annual Scottish Acorn Computer Show will take place as scheduled on Sunday the 8th of November from 10am until 5pm at the Glasgow Marriott Hotel, Argyle Street, Glasgow. Organiser Robert Todd, one of the key people behind moves to set up a new company to continue Acorn desktop computers, says the show will have over 30 exhibitors and it is hoped that by then good news will mean that Phoebe will be given a good airing.

The official show Web site is at: http://www.tecs.co.uk/sacs/. More information is available by emailing sacs@tecs.co.uk. Those wishing to apply for a late stand to exhibit should contact Robert Todd at Todd Education Computer Services. Tel: 0141 644 4952, email: info@tecs.co.uk, Web: http://www.tecs.co.uk

RETAIL

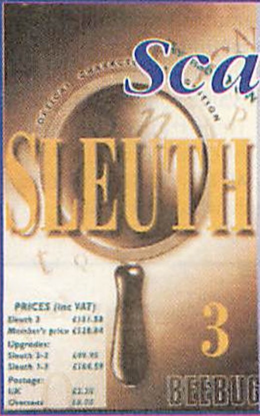
BEEBUG *for all your Acorn needs*

Established since 1982

A standing *Ovation*

Ovation Pro is the leading desktop publishing package for Acorn users; and as such we'd recommend its purchase to all; (£193.88 full retail, or £139.88 as an upgrade) but what if you just want an advanced word processor? Try the original Ovation; now including Desktop Thesauras and Getting into Ovation book [whilst stocks last] at £80.

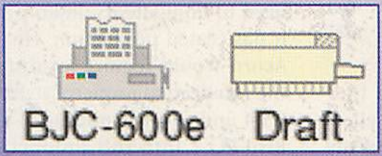
Scanner Deals



Get the Plustek Optic Pro, together with ImageMaster, TWAIN and Sleuth 2 OCR software for just £135 inc VAT.

Alternatively, the BJC4300 scanner head; again with ImageMaster, TWAIN and Sleuth 2 OCR for just £135 inc VAT.

Printer *Specials*



Brother Laser Printers

HL730	£330.00
HL1050	£341.00

Epson Stylus Inkjet Printers
New launch: Stylus Colour 440 series; with superb print quality. Call for best prices.

Beebug shall be represented at the Acorn Midlands Show, and we'll have copies of Ovation Pro and Sleuth 3 available (and RISC User).

Saturday 28th November
National Motorcycle Museum, Birmingham

A wide range of software is still available from Beebug Limited

BEEBUG
Phantasm
The ArtWorks colour companion

Phantasm
the ultimate ArtWorks tool
£17.50 inc VAT

ArcScan III
magazine and book database program
£15.86 inc VAT

RU Fonts Discs
add some fonts to your RISC OS system
£40.00 inc VAT

RECONDITIONED A5000s are also available, from only £200 inclusive. Call for details of specifications.

Zipping along

There our now several options for removable storage which we supply. For details of Zip, Zip+, Syjet, EZFlyer and Jaz drives write or phone today!

BEEBUG Limited, 117 Hatfield Road, St Albans, Herts AL1 4JS
Tel: 01727 840303 Fax: 01727 860263 Email: sales@beebug.co.uk

Carriage is £11.75 on hardware, £4.20 on Ovation offer & Ovation Pro. E&OE.

The stuff of folklore

Some things are meant to be. Peter Bondar is a popular figure in the Acorn community, although support for the larger-than-life former director of Acorn Risc Technologies isn't universal. While Bondar takes a lot of the credit for injecting new enthusiasm into Acorn, culminating in the radical Risc PC back in 1994, there is a view that his premature revelation of the Phoebe over two years ago was a serious strategic error which hurt the Acorn market.


Peter Bondar

However, all this became academic when, along with then CEO David Lee and several other board members, Bondar left Acorn rather suddenly, all apparently victims of political manoeuvring. Without even a Risc PC as a souvenir, Bondar thought his connection with Acorn was permanently severed. After a summer happily devoid of having to go to the office and, instead, messing around with his hobby of building and flying light aircraft, Bondar apparently arranged to meet a former colleague in a secluded pub outside Cambridge in order to investigate opportunities for getting back to earning a living.

Lo and behold, several dozen of his former Acorn colleagues were drowning their sorrows in the bar. That, according to Bondar, was how he found out about Black Thursday. Things moved fast from there – sensitive to the fact that he wasn't the blue-eyed boy to all in the Acorn community, Bondar tentatively sounded out the said community with a few postings on the Acorn newsgroups with some embryonic suggestions as to how to revive Phoebe et al.

Fate whirred along and Bondar was soon appointed chief negotiator by the Project Phoenix group to persuade Acorn to sell the rights to Acorn personal computers. Bondar told *Acorn User* that he was unconcerned that he would have to face up to Stand Boland, Acorn's hatchet man CEO who originally caused Bondar's own departure from the company. There are already grumbles that, by rights, the cost of the one month contract Bondar secured from Phoenix members ought to be enough to guarantee something as unlikely as Bill Gates recommending Acorns.

However, Bondar feels he's the key to the future of Phoenix and his fee is good value compared to similar instances in business. Perhaps more importantly for Bondar, he will have probably and quite by chance engineered a custom-made future for himself. ART Mk II is on the horizon and this time, free of the baggage and politics which have always dogged Acorn internally.

Phoenix from Phoebe's ashes?

Following the shock announcement of 17 September, that Acorn is closing its Workstation Division, cancelling the whole Phoebe Risc PC 2 project and calling off the Acorn World 98 show, there have been a number of disparate, knee-jerk reactions aimed at resurrecting Phoebe and saving RISC OS. These included the creation of mailing lists, a petition of supporters for Acorn desktops, and a venture capital project for investors interested in marketing Phoebe.

Amid this confusion and chaos, Robert Todd of TECS, aided by Chris Evans of CJE Micros, organised a meeting of Acorn Dealers and Developers to overcome the problems of a fragmented approach and to agree a unified plan to save Phoebe, at least. It was called Project Phoenix and it took place on Friday 25 September at the Garden House Hotel in Cambridge.



Around 75 Dealers, Developers and other interested parties attended the meeting, which was chaired by Ian Goodall of Argonet. They listened as Chris Cox, with occasional prompts from Dave Walker, give details of the states of development of the Phoebe Risc PC 2 and of RISC OS 4 as they existed at the time the project was cancelled. The hardware, Phoebe, is more-or-less ready for production but the software, RISC OS 4, is only around 80% complete and requires a further two month's work, mostly quality assurance testing.



There followed a series of presentations from some of the people present highlighting many of the problems and suggesting a variety of possible solutions, but it wasn't until Peter Bondar addressed the meeting that anything like a unified rescue plan began to emerge.

He started by explaining the events which lead to him leaving Acorn involuntarily, and gave reasons for the company's decision to concentrate on the design of super-chip sets for digital TV and the licensing of thin client technology. Bondar described what he thought should be done to save RISC OS and the desktop business, and how he would wish to be involved in the rescue. His plan was to head a consortium which would create a new company with the intention of buying the desktop business from Acorn, so that it could produce Phoebe and reinstate the Acorn World 1998 show.

The new company would call upon the services of staff recently employed at Acorn, and it is hoped that much of the hardware could be acquired from Acorn who will need to liquidate its desktop stock now that it has ceased production. He explained that Acorn would require a substantial sum for the intellectual property rights (IPR) of RISC OS 4 and further funding to get the Phoebe Risc PC 2 into full production. However, much will depend on negotiations set for early October. Bondar hoped to be able to sign a contract with Acorn for its desktop business, within three weeks and he expected that he would be able to deliver Phoebe to dealers before Christmas.

The proposal was accepted almost unanimously (the sole dissenter declaring a vested interest), and Peter was appointed to head the virtual company which was to be funded, for the first month initially, by 27 companies represented at the meeting. A Steering Group was appointed to liase with Peter and to report to the group and to the user base as appropriate.

The Head Honcho is back at the helm and it's the best chance we have to reinstate the Phoebe project.

David Watkins

King of the Castle?

Castle Technology's Jack Lillingstone, who decided not to join the Phoenix group, has revealed to *Acorn User* that he has been involved in high-level negotiations with Acorn to take over the distribution of Acorn desktop products, a function which was formerly the responsibility of the now-defunct Acorn Workstations Division. The fine print of the deal had yet to be approved, so Lillingstone was unable to talk in-depth about the arrangement except that he was confident that it would be good news for the whole Acorn dealer market, helping to halt the long term decline in Acorn's success in the schools market in particular.

As we understand it, if Lillingstone's proposal was accepted, most of the underlying dealer infrastructure would be preserved, including Acorn dealer hot lines and the discounting schemes dealers have qualified for to date. Castle Technology has in the past specialised in acquiring obsolete stock from Acorn and selling it on, which probably sparked speculation that they were simply interested in acquiring un-sold stock.

However, Lillingstone explained it was not the case this time. He added that he would not underestimate the challenge and that extra staff would need to be recruited. Lillingstone agreed that previous third party distribution arrangements had not worked well, but he believed that he knew where they had gone wrong in the past and the same mistakes would be avoided. He also conceded that rival dealers who might have been interested in taking on the distribution job would naturally need reassurances that the deal would be fair and good for them too.

There was a hint from Lillingstone that Xemplar's influence on the Acorn education market might be radically altered as a result of his deal with Acorn, though he was unable to expand on this. It's no secret among the Acorn dealer community Xemplar is believed to have failed to honour its stated aim of offering Acorn and Apple products equally to schools. Indeed, a summer discounting campaign by Xemplar appeared to damage the faith of customers outside Xemplar's remit.

Brendan O'Reilly, Xemplar's chief, categorically denied to *Acorn User* rumours including the withdrawal of marketing and support by Xemplar for Acorn products, that Acorn was trying to sell its stake in Xemplar and that Xemplar was no longer selling the lion's share of Acorn's production. However, he was unable to firmly predict what Xemplar's business relationship with Acorn would be. He said he would prefer to source product directly from Acorn, but conceded that he might have to do businesses with Castle if they won the exclusive distribution rights or even with Peter Bondar's Phoenix/ART company, if it materialised.

Another twist to the story unfolded as we were going to press – with Bondar revealing that he was signing a memorandum of understanding with Acorn, which basically meant that Acorn would entertain the Phoenix offer if finance could be arranged. This means that Castle technology's efforts are on hold until Phoenix progresses its bid or otherwise. Acorn and Bondar agreed a three week time limit, but it's likely that agreement will be well inside this deadline. The full story is likely to be out in our next, Christmas issue.

Problems abroad

Acorn isn't alone in its woes: this year's Apple Expo show, due to be held at the end of November, has been hit by the pull-out of none other than Apple UK itself. You can even draw comparisons with Apple and Acorn last year when the former decided to axe its Newton division. Alas, in that case there was no saviour – we can only hope that the comparison ends there.

Wacom reduces prices

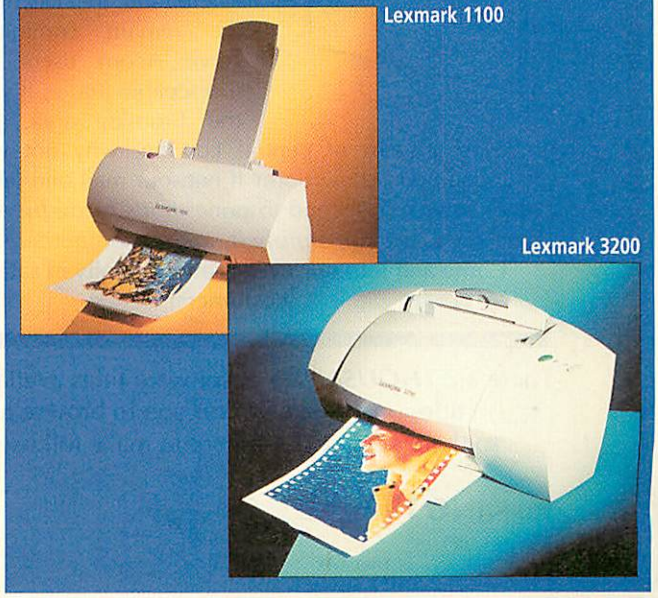
Wacom have made useful cuts to the pricing of its consumer graphics tablet range. PenPartner with UltraPen, for example, is reduced from £74.90 to £59.90. For more information, check the Wacom web site at http://www.wacom.de or contact the UK distributor, Computers Unlimited on tel: 0181 358 5857 (http://www.unlimited.com).

Hewlett-Packard backs ARM

Hewlett-Packard, which makes everything from, chips to PCs, printers pocket computers, has licensed the ARM7TDMI and the ARM740T microprocessor cores from ARM. HP's Integrated Circuit Business Division at HP will use the ARM cores in a wide variety of HP products, such as portable computing, networking and computer peripherals. HP could use these cores in page printers and pocket computers or even thin client stations. "We view the signing of this agreement with ARM as a key event in broadening our IP portfolio and as the start of a long-term relationship," said HP's statement.

Lexmark expands ink-jet range

When are we going to get Acorn drivers for Lexmark printers? The company, which used to be part of IBM, has just introduced a sub-£150 1200x1200dpi, photo-ready, colour ink-jet printer, the Lexmark 3200. A sub-£100 600dpi model, the Lexmark 1100, has also been announced. It's over to the developers now for some good news, hopefully? Lexmark, http://www.lexmark.co.uk



Lexmark 1100

Lexmark 3200

THE DATA STORE

15th Anniversary Year

From Data Store Software...



Version 6.02 now available!

PRICE £31.95 inc.VAT and postage

SITE LICENCES AVAILABLE

Upgrades at special prices for owners of earlier versions: phone for details

Our existing customers know the wide range of products we supply, but if you've never purchased from us before, here are just a few of the names...

Canon Printers • Epson Printers and Scanners
HP Laser Printers • Olympus Digital Cameras
Iiyama and Shinho Monitors • Plustek Scanners
Yamaha CD Writers • Iomega Zip and Jaz Drives
Eesox CD-ROM Drives • Psion Palmtops
Computer Connections 'Swap Drives'
Audio Dynamics MIDI Cards
Fatar MIDI Keyboards and Accessories
Roland MIDI Sound Modules and Keyboards
Yamaha MIDI Sound Modules and Keyboards
Typhoon and Primax Speakers

and if it's not in this list, we can probably still get it!

SPECIAL OFFERS

IDE hard discs for RiscPCs and A7000s
3.2GB *£115*
4.3GB *£130*
6.5GB *£159*

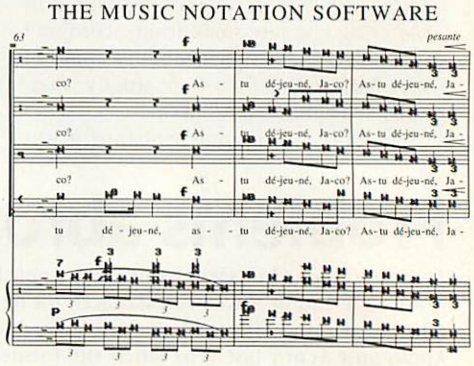
Epson scanner bundles...
GT5500 (SCSI) £299
including ImageMaster/TWAIN for Acorn and separate software for Windows.

SIMM DRAM (RiscPC/A7000)
16MB *£18.95*
32MB *£35*

56k External Modems including cable
£89.00

SIBELIUS

THE MUSIC NOTATION SOFTWARE



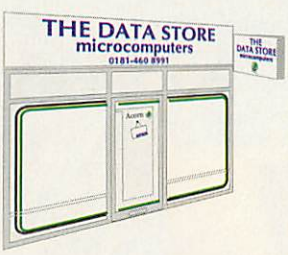
NEW LOW PRICES...

Sibelius 7	***£620***
Sibelius 7 Student	***£320***
Sibelius 6	***£105***
Optical Manuscript	***£275***

And new...

Sibelius for Windows ***£695***

The Data Store is one of only three dealers in the country which offer full, detailed demonstrations of Sibelius software. If you want to find out how the best just got better, ring us **NOW** for an appointment - you'll need at least an hour!



The Data Store is proud to have served the Acorn community for over 15 years, from the days of the BBC Micro and the Electron, and we remain committed to serve Acorn users for the foreseeable future. If you're in the Bromley area, just 10 miles south-east of central London, why not visit our well-equipped showroom? If not, our mail and telephone order service is second to none. *If it's made **by** Acorn or **for** Acorn, we can supply it, and at competitive prices.*
Come and join our ever-growing family of satisfied customers!

There are ***THOUSANDS*** of software titles available for Acorn Computers! We stock hundreds of the most popular titles on our shelves for you to browse and try, and can obtain most of the rest within a few days - so there's ***NO EXCUSE*** not to make full use of your Acorn machine ***RIGHT NOW!*** Place an order today!

OPENING HOURS

	AM	PM		AM	PM
Monday	9:30	5:30	Thursday	9:30	5:30
Tuesday	9:30	5:30	Friday	9:30	5:30
Wednesday	Closed	Closed	Saturday	9:30	5:30

6 CHATTERTON ROAD BROMLEY KENT BR2 9QN
Tel 0181-460 8991 • ***Fax*** 0181-313 0400
Web http://www.datstore.demon.co.uk/
Email info@datstore.demon.co.uk

ALL PRICES IN THIS ADVERTISEMENT INCLUDE VAT @ 17½%

Don't forget, the future's yellow...!

news

From pirates to numeracy

Maths Explorer-Number is a new numeracy package which should help children with their arithmetic as well have some fun. The Key Stage 2 package features pirates on the high seas – pupils are on a quest to deal with pesky pirates using strategies involving mathematical skills.

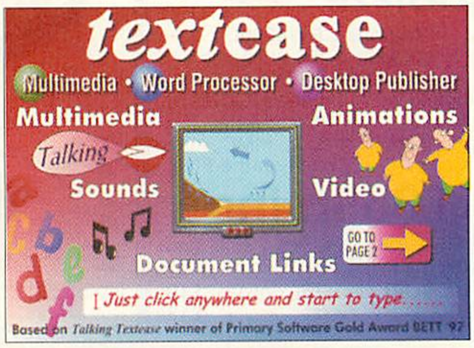
Three levels of difficulty are offered and there is a Briefing Section, Fact Point and a final interactive test. Puzzles can also be set which can be printed out and tackled away from the computer. A five user licence for Maths Explorer-Number costs £59 + VAT. Granada Learning's new address is: Granada Television, Quay Street, Manchester, M60 9EA, tel: 0161 827 2927, fax: 0161 827 2966, email: margaret.thompson@gmg.co.uk, Web: http://www.granada-learning.com



Maths Explorer-Number

Softease Version 4

Summer is just fading out as this is written, but already the talk is of BETT, the education show, at the Grand Hall Olympia, between January 13-16 next year. Softease will be there to showcase version 4 of its successful schools desktop publishing package, Textease Multimedia. The new version features a 'Text Flow' function



for enabling text to flow around pictures. There are other improvements, including an un-do and re-do feature, so mistakes can be corrected simply.

The current version of the package is now supplied with the once-optional HTML Web format converter free of charge. Talking Textease, the predecessor to Textease Multimedia, won a Gold Award at the 1997 BETT awards. Softease can be contacted at tel: 01322 204911, fax: 01322 609224, email: sales@softease.co.uk, Web: http://www.softease.co.uk

Chivvy-up your PC with RISC OS?

ChiBER, is the interesting new name of a project to develop a PCI plug-in expansion card which will, effectively, provide RISC OS for PC users. The project is backed by hardware gurus, Simtec and the boundless energies of Gordon Taylor.

Little solid information about the project is currently available and the ChiBER web site is curiously limited in its information, however we have been told that the card will feature a StrongARM and a RISC OS clone (ChiOS) and it will probably have its own RAM on board. Potential customers and developers are invited to contact ChiBER at interest@chios.org.uk or develop@chios.org.uk. The web site is at http://www.chios.org.uk

Happy Christmas from Canon

Canon is the best supported printer brand in the Acorn world. This could be good news to some lucky Acorn users as Canon has just started a promotion which nets Canon colour printer and MultiPASS combo printer/fax/scanner buyers one free video rental from Blockbuster Video for up to a year. The promotion finishes at the end of 1999, so the earlier you buy a Canon printer, the better.

Wot, no UDMA?

One of a number of key areas in which Phoebe doesn't compare well to its PC competitors is in hard disc support. For over a year PCs have benefited from UDMA-33 or 33MHz Ultra DMA, a burst-mode protocol for doubling the speed of hard disc transfers. The industry has just started to introduce a 66MHz version of UDMA – maybe the new Phoenix company, if it happens, can be free to explore these kinds of advances with greater confidence than before?

Frequently Asked Questions

The Acorn corporate Web site (http://www.acorn.com), nearly three weeks after Black Thursday, continues to maintain references to the long-since departed Workstation Division. While the Acorn Webmaster may have been slow to erase the former existence of Acorn Workstations, a notice attempting to answer basic questions about what has happened quickly appeared at http://www.acorn.com/acorn/faq and here it is:

Q. What has happened to Phoebe?

A. The Phoebe project has been cancelled although Acorn are considering offers from external parties to take over the project.

Q. What will happen to Phoebe deposits?

A. Deposits placed through Acorn's dealer channel will be refunded via the dealers themselves. Deposits placed via the 'Phoebe offer' recently announced will not be processed.

Q. What has happened to Acorn World '98?

A. Acorn World has been postponed. All ticket money will be refunded.

Q. How are the current products affected?

A. All products will continue for the foreseeable future.

Q. Will current warranties be honoured?

A. Yes.

Q. Does Acorn make any support guarantees?

A. Acorn's current support remains unchanged.

Q. What will happen to the Clan?

A. This matter is pending.

Q. What will happen to Clan membership fees?

A. Outstanding orders are being held by Acorn.

Q. What is the current and future status of the Acorn dealers?

A. This matter is pending.

Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: news@acornuser.com

Showroom open Mon-Sat 10-18.00 hrs (All prices INCLUDE VAT) Carriage not included

RiscOS Computer Systems

1yr warr. Carriage included on computers. All machines are single slice. Backplane fitted to 10M/34M RiscPC only.

233MHz StrongARM now fitted to all RiscPC Computers.

Computer Model with	14" (Samsung)	17"(VMastr)	No Monitor
Acorn NC 16MB(10BaseT) with Mse/Keybd	£460	£700	£330
A7000+ 8MHD1.2Gb	£905	£1160	£785
A7000+ 8MHD1.2Gb+8xCD	£955	£1210	£835
A7000+ 8MHD1.2Gb+24xCD	£975	£1230	£855
RiscPC SA233 4MHD1.7 (SRP20A)	£1019	£1274	£899
RiscPC SA233 4MHD1.2+8xCD (SRP21)	£1030	£1285	£910
RiscPC SA233 4MHD1.7+24xCD (SRP20A+CD)	£1069	£1324	£949
RiscPC SA233 10MHD1.2+8xCD (SRP26A)	£1345	£1600	£1225
RiscPC J233 34MHD1.7+24xCD (SRP41)	£1445	£1700	£1325

RiscPC J233 includes the Acorn J233 Internet software pack comprising !Browse, RisCafe JAVA & OmniClient II

Add £60 to 14" (Samsung) prices for Samsung 15" Monitor instead.

Add £25 to 17" prices for VisionMasterPro instead of VisionMaster

JazZip Tools £15a

(free if purchased with drive)

JazZip provides you with a complete set of RiscOS tools for Jaz/Zip drives which are equivalent to those provided with the PC DOS utilities that are provided with Iomega drives. Requires a driver for parallel use. Features include;

- Standard password protection of discs.
- Lock/unlock zip/jaz discs with/without passwords
- Unlock zip/jaz discs until next ejected from drive.
- Low Level format zip/jaz discs.
- Initialise zip/jaz discs for RiscOS or DOS.
- Unprotect the Tools disc

New Software Releases

Abuse for RiscPC/A7000 £23a
- 8Mb RAM, 10Mb HD space, VGA

Ankh for RiscOS £23a
- RiscOS >=3.1 with 4Mb RAM, VGA & CD-ROM

Descent for RiscOS £28a
- RiscPC with 8Mb RAM & CD-ROM (SA pref'd)

DOOM Trilogy for RiscOS £30a
- A5000 - RiscPC with 8Mb RAM & CD-ROM

Frak for RiscPC/A7000 £14a

CD-RW & CDBlaze



Yamaha CRW4260t

Recordable & Re-Writeable Internal SCSI CD-ROM drive complete with Cumana's !CDBlaze, cables and PC software. Supports multi-session, MMC, Audio Modes 1 & 2, Write-on-the-Fly

£369b Inc

!CDBlaze (Software Only)	£89a
650Mb CD-R disc	£2a
650Mb CD-R discs (Box of 10)	£19b
650Mb CD-RW disc	£18a

3Com ISDN LAN Modem £325c

Connect up to 4* computers[2] to the Internet with just ONE single ISDN dial-up[3] internet account!

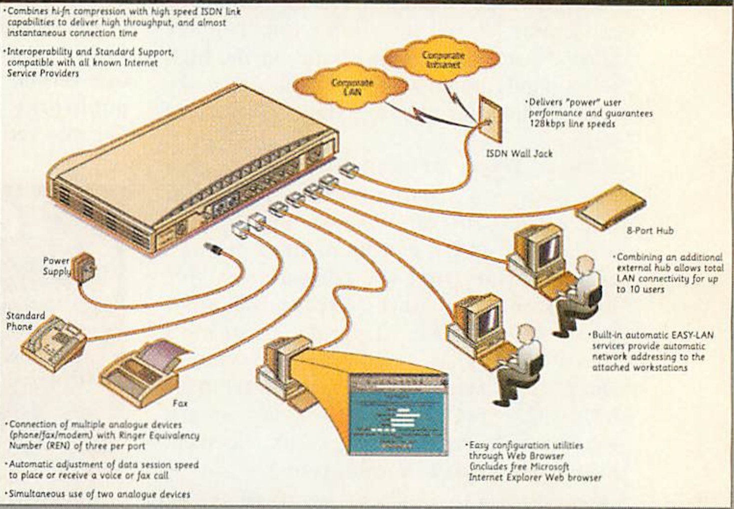
This amazingly easy to use unit is suitable for RiscOS, PC, Mac & Unix computers and compatible with BT ISDN/HomeHighway services. It provides;

- 128kbps Multilink PPP ISDN with compression & PAP/CHAP security.
- A FOUR* port 10BaseT Hub for networking to each computer[2].
- TWO analogue telephone ports for standard telephones, faxes & modems.
- DHCP Server for automatically configuring computers for the network.
- Built-In Web server for configuration & diagnostics from a conn'd computer[1].
- Built-In DNS server.
- Flash upgradeable for user-installable future firmware upgrades.

Ring us now for further information.

* - Expandable to support up to 10 Computers. [1] - A JavaScript enabled Web browser is required for access to Web Server. [2] - Each connected computer must be equipped with a 10BaseT network card. [3] - ISDN line and ISP account not included. NOTE - PSU, Network cabling for ONE computer and ISDN Cabling is included with the unit.

The All-in-one Communications Tool for Small Business Internet Access and LAN Services



Mail Order - 0161-474 0778 (All prices INCLUDE VAT) The lowest prices without compromise

Monitors (Carriage £10)

Older computers will require an adaptor £12

Samsung 14" Monitor £120
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.

Samsung 15" Monitor £180
High spec FST Tube with 0.28" dot pitch

Ilyama VisionMaster 17" £370
High spec FST Tube with 0.26" dot pitch

Ily VisionMaster Pro 17" £390
Very High spec Diamondtron tube, 0.25" stripe

Memory

Following prices strictly whilst stocks last.

RiscPC/A7000 SIMMS

16Mb	£20a	32Mb	£35a
		High clearance add £5	
64Mb	£110a	128Mb	£Calla

RiscPC VRAM

1Mb 2nd user	£35a	2Mb	£79a

1-2Mb u/g (exchange) £50a

Call for details of memory for other models.

Hard Drives/Interfaces+

Carriage: a=£2, b=£6, c=£8

Hard Drives

Quantum 2.1Gb IDE	£105b
Quantum 6.4 Gb IDE	£160b
Cheetah 4.5Gb SCSI	£520c

10,000rpm Cheetah drives useful for VideoDsk

Simtec IDE Interface £55a
Supports up to 4 AT devices including Hard Drives, CD-ROM drives and zip drives. Add £15 for A3000-A4000 version.

Cumana SCSI II £165b

CD-ROM Drives

Internal CD-ROM Drives

Panas'c 24xCD **ATAPI**	£60c
Toshiba 32xCD **ATAPI**	£75c
Toshiba 32x CD **SCSI**	£100c
Cable & Fitting Kit	£10a

Compatible with RiscOS 3.60 or greater.

External CD-ROM Drives

Panas'c 24xCD **ATAPI**	£120c
Toshiba 32x CD **SCSI**	£160c

External Drives require a suitable Data cable.

I[3] Networking (Carr. £6)

A30X0 EtherLan 102	£130
Archi EtherLan 514	£130
RPC/A7k EtherLan 602	£110

Add £17 to above prices for Access+.

RiscPC Upgrades

RiscOS 3.70 Upgrade £58a
- Above is suitable for RiscPC's only.

233MHz StrongARM	£275b
586-133 PC Card (512kb)	£360c
PC Pro v2(without PCExchange)	£38a
Windows '95 CD (Full)	£80a

Can be installed without any prev PCOS pres't

2nd Slice with PSU	£116c
2nd Slice without PSU	£90c
YES 16 bit Mozart Card	£70a

Printers (Carriage £8)

Canon BJC-4300	£125
Canon BJC-4650 (A3)	£Call
BJC-7000 (1200x600dpi)	£250
Epson 640 (1440x720dpi)	£185
Epson Photo 700 (A4)	£220
Epson Photo EX (A3)	£385
Epson 850 (1440x720dpi)	£280
HP LaserJets 6L (6ppm)	£285
HP LaserJets 6P (8ppm)	£585

Zip/Jaz Drives

Include Our JazZip tools
- £17 if purchased separately

Int SCSI zip drive	£105c
Ext SCSI zip drive	£105c
Ext Parallel zip drive	£105c

- add £29 for RiscOS Parallel Driver

100Mb zip cartridge	£11a
Pk of 6 zip discs+caddy	£55b
Int Jaz 1Gb £220/2Gb	£295c
External 2Gb Jaz	£305c
Jaz cartr. 1Gb £68/2Gb	£73a

Carriage: a = £2, b = £6, c = £8, d = £10

Modems (Carriage £8)

Budget 56kVoice (Flash)	£75
Pace 56k Voice (Flash)	£135
Pace 56k Solo (Flash)	£185

- The Solo modem can save fax & voice
- messages without a computer attached!

ANT Internet Suite II	£110a
Dual Serial Card	£104b

9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

Portable Computers

Carriage: a=£2, b=£6, c=£8

Pocket Book II (1Mb)	£195c
Psion 5 4Mb RAM	**£395c**
Psion 5 8Mb RAM	**£425c**

- includes PsiWin Link

AutoRoute Express £30a
- one of the best packages for the PB/3a

PsiRisc £67a

A-Link	£59a		
Parallel Link	£34a	PsiWin PC Link	£80b
3/3a Mains Adap.	£18a	5 Mains Adaptor	£20b

Scanners (Carriage £8)

ScanLight Video 256 £75
- suitable for A3000-A4000 (Only Two left)

Epson Colour Scanners
Include !TWAIN & ImageMaster for RiscOS. Bundles include software for PC's/PC Cards

GTx-5500 SCSI bundle	£265
GTx-7000 Para bundle	£240
GTx-9500 Para bundle	£615
GTx-9500 SCSI bundle	£645

Hardware Upgrades

24i16 Card (1Mb)	£450b
DMI50 Dual Midi Card	£138b
DMI50XGS Midi/Synth	£335b
Dual Serial Card	£104b
FPA for 25MHz ARM3	£67a
Joystick I/F (Not RiscPC)	£20a
Logitech Mouse (Acorn)	£29a
Movie Magic (1 only)	£100b
- Includes two VideoCD films	
RiscTV Card (Irlam)	£285b
RiscTV Keying Module	£46a
RiscTV Teletext option	£45a
Scart Cable (9 or 15 pin)	£12a
Serial Upgrade (A3000)	£27a
100W Stereo Speakers	£20c

Books (No VAT)

Carriage: a=£2, b=£6, c=£8,

Acorn RISCOS3 PRM's	£99.95c
Acorn Volume 5a PRM	£29.75c
Acorn BBC Basic VI Guide	£19.95b
Acorn RiscPC Tech Ref Manual	£49.95c
Budget DTP (Dabs)	£5.00a
'C' A Dabhand Guide (Dabs)	£5.00b
RiscOS 3 First Steps (Dabs)	£5.00a
Wimp Programming for All (Beebug)	£10.95a

CD-ROM Software

Browse (Acorn)	**£36.00a**
RisCafe (JAVA)	**£36.00a**
ArtWorks on CD (CC)	£105b
Childrens Micropedia (Kingfisher)	£72b
ClipArt CD 1/2 (CC)	£21a each
Descent (RiscPC 8Mb)	£28a
Doom Trilogy (RiscPC only)	**£30a**
Dune II (Eclipse)	£32a
Hutchinsons Encyclopedia 92 for RiscOS	£10a
Hutchinsons Encyclopedia 97 for PC only	£10a
Musical Instruments (MS)	£50a
RiscDisc Vol 1, 2 or 3 CD	£12a each
Simon the Sorcerer CD	£32a
The Way Things Work (DK)	£50a
TopicArtCD (DTP)	£10a
TOTS TV CD	£19a
Typography Font CD	£30a
Ultimate Human Body (DK)	£50a

Games (Carriage £2)

Abuse	**£23a**
Alone in the Dark (Krisalis)	£32a
Birds of War (4D) 2Mb	£25a
B H P (TBA)	£28a
Break 147/Superpool (4D)	£25a
Crystal Maze (Sher) Floppy £28 / CD	£28a
Cyber Chess (4D)	£16a
Drifter (4D)	£25a
Dune II (floppy) (Eclipse)	£27a
Fire & Ice (Times Warner)	£23a
Frak	£14a
Krisalis Collection	£28a
Lotus Turbo Chall2 (Kris)	£26a
Magic Pockets (Reneg)	£22a
Real McCoy 2/3/4/5 (4D)	£25a each
Saloon Cars Deluxe (4D)	£25a
Scrabble (US Gold)	£26a
Simon the Sorcerer 2Mb	£27a
Spobbleoid Fantasy (4D)	£27a
Starfighter 3000 (Fednet)	£28a
Stunt Racer 2000 (4D)	£25a
Syndicate+	**£27a**
Virtual Golf (4D) 2Mb	£25a
Wolfenstein 3D	**£10a**

- Now compatible with RiscPC+StrongARM

Printer Consumables

Carriage: £2 for Cartridges, £8 for Toner

BJ-10 (BC-01)	£16	BJ-300 (BJI-642)	£14
BJ-210 (BC-05)	£25	BJC7000 (BJ-60)	£25
BJ-200 (BC-02)	£16	BJC7000 (BJI-61)	£18
BJ-240 (BC-06)	£Call	BJC7000 (BJI-62)	£27
BJC-600 Series			
BJI-201HCbk Black	£9	**BJC-4000 Series**	
BJI-201bk Black	£6	BCI-21Bk Black	£8
BJI-201C/M/Y	£8 ea.	BCI-21C Colour	£15
BJC-800		BC-20 Fast Black	£23
BJI-643 Black	£18	BC-21 Cartridge	£32
BJI-643C/M/Y	£23 ea.	BC-22 Photo Cart	£39
HP DeskJets-500 ser.		**HP DeskJets 600 ser.**	
Mono	£21	Mono	£22
Colour	£23	Colour	£25
Eps Stylus Black	£14	Eps Stylus II Black	£19
Eps Stylus Colour	£23	Eps Stylus II Col'r	£24
Laser Toner		C3903A (LJ5P)	£64
EP-L (LBP-4)	£64	HP92274A (LJ4L)	£54

Applications

ANT Int. Suite	£110a	ArcFax	£31a
ArtWorks (CC)	£104b	Card Shop	£23a
Compression	£31a	DataPower2	£165b
Disc Rescue 2	£43a	DrawWorks Des	£27a
Eureka v3	£105b	FastSpool+	£18a
FireWorkz Pro	£165b	Font FX 6	£30a
HTML Edit 3	£47a	ImageFS2	£43a
Impression Style	£83b	Impr. Publisher	£136b
MacFS	£105a	MacFS Lite (CC)	£51a
MidiWorks Light	£30a	MovieFS	£29a
Mr Clippy (iSV)	£19a	PC Pro v2	£38a
PC Pro v2 + Exch	£46a	Personal Acc'ts	£45a
PhotoDesk Light	£129b	PsiRisc	£67a
Sibelius 6	£100b	Sibelius 7 Stud	£349b
Sibelius 7	£699b	SparkFS	£24a
StrongGuard	£24a	Web Design T'kit	£28a
X-Stich2	£28a	Win95FS	£39a

Educational (Carr. £2)

10/10 Series **£14a each**

Early Essentials (over 7), English (6-16yrs), French (8-16yrs), Junior Essentials (5-11), Maths (Number) (6-16), Maths (Algebra) (6-16), Maths (Statistics) (6-16), Maths (Geom'y) (6-16), Spelling (over 9), Essential IT, Geog.,

Fun School 3 (under 5, 5-7, or over 7)	£22a
Fun School 4 (under 5, 5-7, or over 7)	£22a
Maths Circus (4Mation)	£28a
Playdays (Gamesware)	£24a
Rosie & JimTwin Pack	£17a
Wizards Revenge	£18a

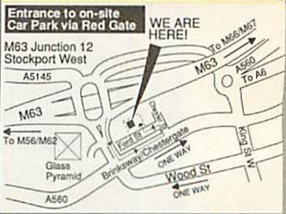
Terms & Carriage

Carriage: a=£2, b=£6, c=£8

Carriage: To benefit personal callers to our showroom carriage is itemised seperately. The carriage indicated is for single items. Please call us for total carriage when ordering more than one item since it is not cumulative.

Terms: All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Chann Isles, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

Where to Find Us



Desktop Projects Ltd

Tel: 0161-474 0778
Fax: 0161-474 0781

Unit 2A, Heapriding Business Park, Ford St, STOCKPORT, Cheshire. SK3 0BT. www.desktopp.demon.co.uk

Email: info@desktopp.demon.co.uk. Open Mon-Sat 09.00-17.00 hours.

We Accept SWITCH Access VISA DELTA

Acorn Centres of Technology

comms

FidoNet over Internet

FidoNet, the worldwide amateur data communications network, was conceived in 1984 by Tom Jennings in St Louis. He and a friend connected their Tandy computers by telephone, and started passing text messages between themselves. At that time, the Internet was still an experimental network originally designed to support military research, and barely a twinkle in the eyes of those working in LAN and Ethernet technology.

Since then, FidoNet has developed to use simple data packet formats and node addressing to enable enthusiast bulletin board systems all over the world to pass messages between them over the telephone in a relay system that avoids long-distance calls. FidoNet could be considered a technical forerunner of the Internet as we now know it.

As with the amateur radio fraternity, while there has been a pioneering spirit to embrace and extend the technology, there is still plenty of interest in keeping it working in its original form. The Internet itself now offers a potentially much cheaper transport medium than using the telephone for FidoNet communication.

IP or Internet Protocol is a generic term for the Internet transport of different data types, from digitised telephone conversations to multimedia. FidoNet-over-IP is the encapsulation of standard FidoNet packets inside IP packets and can be used to connect two Fido nodes as long as they are both connected to the Internet at the time.

Users of FreeBSD, Linux, OS/2, Win95 and Win-NT operating systems can use BinkD, the IP version of the most popular freeware Fidonet mailer program, *Binkleyterm*. As yet there is no RISC OS port, but at least two of the remaining Acorn-interest BBSs have regular Internet connections, so it may yet come to pass. You can read more about Fidonet-over-IP at http://home.nrh.de/~lbehet/fido/



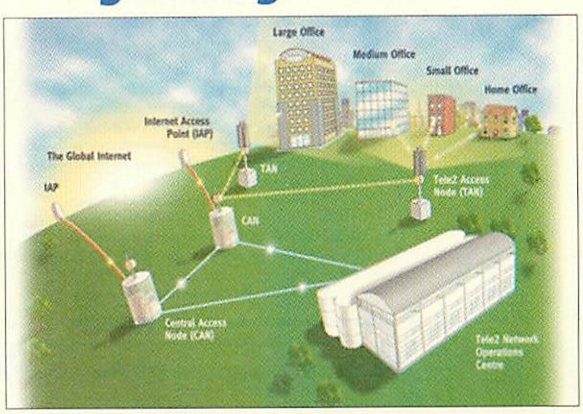
The Dog just won't lie down!

Highway or byway?

Is British Telecom's new *Home Highway* service what we've all been waiting for, or will BT's mass market ISDN2e service be sidelined by the new wireless and cable contenders?

Home Highway converts customers' existing analogue telephone lines to ISDN2e service, allowing simultaneous voice and data calls. The installation replaces the existing analogue line with two new 64kbps digital lines, retaining the old telephone number for one and issuing a new number for the second.

The twin 64kbps B channels allow any two simultaneous analogue or digital calls, but "BONDING" them together with a suitably equipped PC and ISP to give the full 128Kbps allows no other calls in or out. Two phones just plug in to the supplied wall box, while data connections require an ISDN Terminal Adaptor costing about £250 for an external unit.



A new dawn in Berkshire?

Home Highway costs £116.33 to convert an existing line, then £40 a month with £15 worth of free calls, all VAT inclusive. Compared to the monthly rental of £17.74 inc. VAT for two analogue lines (£116.33 inc. VAT for installation), Home Highway is still an expensive option.

Tele2 UK is a new communications company that's building a digital wireless network starting in Reading, Berkshire. Their customers enjoy a permanent high speed Internet connection that's *always on* and which they claim is six times faster than ISDN and up to 80 per cent cheaper. The installation consists of a compact 'near line of sight' radio receiver/aerial and Ethernet interface box.

Customers pay for data transferred, not call duration. Currently Tele2 UK charge £65 excl. VAT per month for 24 hour connection, 128Kbps and 150Mb monthly data allowance. They expect to cover 60 per cent of the population by 2003. The market for *always on* connections is expanding so expect these rates to fall.

Home Highway
http://www.homehighway.bt.com/static/index.html
Tele2 UK
http://www.tele2.co.uk/index.shtml

Fellows' freeware

Freeware for comms and web users by Roy Fellows can be found on the pages of the Bush Hill Park Computer Club web site. !UplHome creates scripts for !TCPIP (KA9Q), Freenet FTP and sFTP clients to update a remote FTP server with files from your local Web site working copy, for use with Demon, Argonet and many other ISPs. MultiHear is a utility to automate the fiddly task of changing Serial Block drivers in Hearsay2 for owners of multiple serial-port cards. Yes, why is this site called tilmun?

Bush Hill Park Computer Club
http://www.tilmun.demon.co.uk/club/roy.htm

Mystic mouse

You won't find a web site much more enigmatic and beautiful than this. Designed, created and maintained by David using an Acorn StrongARM Risc PC, it contains colour, images, astrology, curious facts, strange humour, and an information page about the Yorkshire Dialect Society. Free downloads include mouse utilities, a hand-wrought font and a pack of playing cards. Do not miss the wonderful Zodiac symbol section. The Gemini qualities and careers shown there are me exactly. But who is Dacha?

Dacha's pages
http://www.users.zetnet.co.uk/dacha/

Stephen's spoo pot

It's a popular Centauri foodstuff known only to Babylon 5 fans, but can also be found on Stephen Courtney's Web site. His web creation utilities list is a comprehensive selection of links to sites hosting web creation and management software tools. Other areas concentrate on the science fiction and fantasy of Terry Pratchett, Star Wars and B5. Stephen also reveals his interests in music, walking, and taking pictures of cats and Brighstone, Isle of Wight.

Stephen Courtney's Web-Design Links
http://www.argonet.co.uk/users/scourtney/weblinks/wdutl.html

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

public domain

Stib

Stib is a nifty clone of that classic arcade game *Puzzle Bobble* (sometimes know as *Bubble Bobble*) that has recently been seen on the Acorn as *Bubble Impact*. *Stib* doesn't really make the grade alongside *Bubble Impact*'s flashy original graphics and sound, but it's nice and fast and does actually play quite well.

Unfortunately there's a lack of levels, but it's not a bad little game. The full Shareware version can be obtained for a registration fee of £7.50, but I'd recommend trying *Bubble Impact* first. The unregistered version of *Stib* can be found the web at http://thor.cam.ac.uk/~jtb20/stuff.html

Making drawfiles

Release 3.10 of *mkdrawf* is now available from Gareth McCaughan's web site at http://g.pet.cam.ac.uk/~gjm11/software.html The software is a powerful tool for creating drawfiles via a drawfile-specific programming language.

CloseUtil

CloseUtil is yet another iconisation tool that functions as a plug-in to Director. The program works by setting up a menu accessed via the close icon of windows. From here you can iconise or title-ise (reduce the window to the title bar only) with a simple select click.

Not really my cup of tea, given the rather more useful iconising and pinboard utilites mentioned in recent issues. *CloseUtil* seems to complicate matters without providing very much extra functionality, but it's worth checking out in case it suits you. *CloseUtil* can be downloaded from the Arcade BBS and *Director* can be obtained from http://www.axis.demon.co.uk/director.html

Iron Dignity

After a very promising demo of Frank Föhl's *Iron Dignity* game last year, development news went very quiet and I was afraid we weren't going to see a playable version of the game. Fortunately Frank has teamed up with Artex, the authors of *Exodus* to complete the project, hopefully for next year. More news soon.

AcornSite outta sight

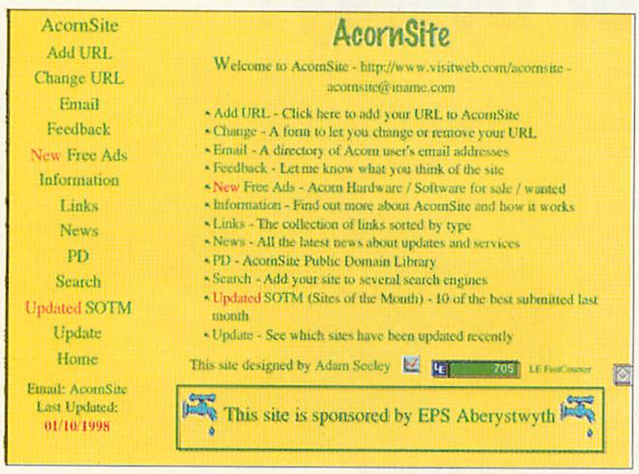
Earlier in the year on the PD page I discussed the need for a central site from which to download PD. Recent trends have seen a slow down in the use of sites like HENSA and the well know Stuttgart ftp server, as PD authors distribute their software from their own web sites. It's become increasingly difficult to keep track of them and to remember to go back to look for new software or updates.

Several people expressed plans to put together a regularly updated links site that keeps track of all this software. I've highlighted a few of these on the PD page in recent months, but the first of them to get going with much success is AcornSite. The first thing that struck me was the lack of imagination put into the name. I know I'm always moaning about this kind of thing, but do we really have to have Acorn, ARM, Arc or RISC in the name of every web site or application? Getting onto the site and seeing the content was much more satisfying.

The set of web pages are simply designed but do the job well. A framed menu gives you access to several main pages, the crucial area being the set of links to other software. Programs are collected under several topics and listed with a brief description of purpose, author and a direct link to the latest version. It's nice and easy to browse down and pick out anything that interests you. The only minor problem was the lack of programs covered — I'm sure it's only a small percentage of the PD software out there. However, the site has only been active for a month or so, and so is actually doing quite well. With the addition of an updates page which is under preparation it is looking to be a very usable resource.



AcornSite works by providing a registration form for software authors who supply their software via their own web pages. All you have to do is fill in a few details and the software descriptions and links are put up onto the site. It has to be an easy process to go through so it doesn't put off the authors from registering regular updates, and I think AcornSite satisfies this important requirement.



The degree of success of the site is the all important thing. If people support it, AcornSite could really become very important and central to the PD scene. It needs enough of the software authors to register their programs to make browsing the site worthwhile and at some level of use I'm sure it could really take off. Lets hope it does.

Point your browser to http://www.argonet.co.uk/users/ajseeley/acornsite/index.htm to check out the latest updates on AcornSite.

VNC Serve

VNC Serve is an interesting implementation of ORL's standard for a remote display system. VNC or Virtual Network Computing allows you to view another computer desktop remotely via a network. The clever part is the platform independence. As long as you have client and server software on the platforms you want to use it on you can use any combination you want.

Not surprisingly the software is supported on PCs and UNIX machines, and we already have two implementations of client software for the Acorn. Now with the latest release from coder Paul Corke, we have a VNC server to run under RISC OS. Unfortunately I'm unable to test the software as I don't have access to a network to run it on. I'd therefore welcome comments that I can pass on to PD page readers from anyone using software. VNC Serve can be located on the web at http://www.interconnex.co.uk/~paul/. ORL's VNC site which contains details of the RISC OS clients can be found at http://www.orl.co.uk/vnc/

Nuclear holocaust

The age-old tanks game of selecting an angle and a power and firing shells at enemy tanks has seen many variations over the years. Starting off life on 8-bit computers as a type-in game, all the way through to the amazingly playable Worms on platforms like the PC and Playstation. On the Acorn there's also been a gradual development of the idea.

A multitude of both commercial and PD clones have been released, with Nuclear Holocaust being one of the most well known. Released originally to a mixed response, the game has had a rocky ride. Problems with the game including the original name, the download size of the game and the annoying music, to name but a few. However a recent update has changed many of the original features and it now deserves another airing on the PD page.

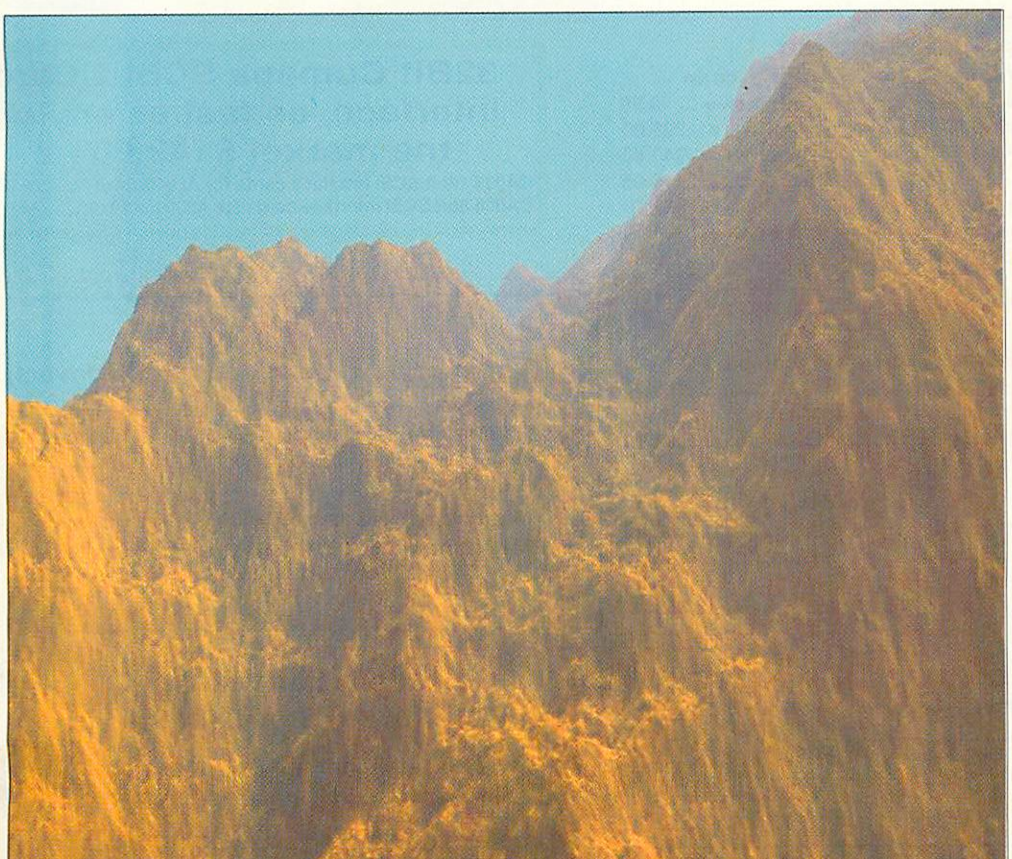
After getting past the rather terse warnings about Shareware registration and the unecessary 30 second delay for unregistered users, you can actually get to grips with the game. The front-end has had a significant re-design, and it's not at all bad for a PD game. There's also been a restructuring of the game data. You can download it from the web site as a game archive and also fetch the music and sound archives only if you want to. More importantly you can now run the game in any resolution, taking advantage of a much bigger screen area on Risc PCs which can handle the extra processor load. This last improvement makes a big difference to the game and will be welcomed by many gamers, but for me the game still has fundamental problems.

Getting to grips with the front-end takes a lot of game play, and even for an experienced player it's not particularly nice to use. The icon system is too confusing and the use of a digits-only display for the angle of shooting constantly annoys me. The game does have a lot going for it, but until these interface issues are sorted it won't be holding a regular place on my hard disk.

Nuclear Holocaust is Shareware with a registration fee of £5. The game can be downloaded from www.acornarcade.com/cgi-bin/go-aa?features/gamesupport/holoc/index.html

Rocky mountain high

Graphics fans should check out Julian Brown's tasty landscape generator that's been released with complete source code. The code uses hexagonal subdivision to create a view of a rocky and mountainous landscape. Download the archive from http://thor.cam.ac.uk/~jtb20/stuff.html



Cacheman

Cacheman is a utility that extracts web pages from *Fresco*'s web cache and allows you to recreate them in the form of the original internet site, on your local hard disk. To get hold of *Cacheman* point your browser to http://www.fabland.home.ml.org/fabsoft/

Quite handy for pulling out and using stuff you've just been browsing through, but for more serious use, make sure you check out *WebGet* which I mentioned in last month's issue. The *WebGet* site is at http://www.ping.demon.co.uk/acorn/webget.html

Rather crude

C3D, or the "Crude 3D Object Editor" is an interesting release from Julian Brown. The code represents a simple but effective 3D editor ideal for constructing low polygon count models. The editor has a very simple interface and few features, but it's very quick to get into.

Hardly a competitor for *Top Model* or even the (now Freeware) *Merlin* package, but certainly of use to coders requiring straightforward low polygon models to use in their code. Ideal perhaps for games coders and demo writers. If you'd like to see further development of the package contact Julian at jtb20@cam.ac.uk or download the program from http://thor.cam.ac.uk/~jtb20/stuff.html

Revelation 98

At the time of writing, the future of the Rev98 demo competition is looking rather bleak following Acorn's shock news announcement, and the cancellation of Acorn World. Hopefully some third parties will step in and sort the situation, but if you're an avid demo fan or an actual demo coder point your browser to the Rev web site at http://www.argonet.co.uk/acornshow/rev/index.html for the latest news.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to pdpage@acornuser.com

CUMANA
The best name in memory

The names you can trust for all your computer requirements.

CANNON COMPUTING

Acorn
Revolutionary Computers

With over 14 years educational experience you know who to trust

We supply the range of computers, A7000s, RiscPCs, Pocket Books and NetWork Computers (NCs).

		(Inc VAT)
A7000+ 8Mb HD1.7Gb with 14" monitor	905.00	1063.38
A7000+ 8Mb HD1.7Gb 32xCD with 14" monitor	947.55	1113.37
A7000+ 8Mb HD1.7Gb 32xCD with 14" monitor, 200 watt speakers & 2 Anglia CDs	999.00	1173.83
233MHz StrongArm RiscPC 4Mb HD1.7Gb with 14" monitor	1032.66	1213.38
233MHz StrongArm RiscPC 4Mb HD1.7Gb 8xCD with 14" monitor	1075.21	1263.37
233MHz StrongArm RiscPC 10Mb HD1.7Gb 8xCD with 14" monitor	1288.00	1513.40
233MHz SA RPC 10Mb HD1.7Gb 32xCD with 14" monitor, 200 watt speakers & 2 Anglia CDs	1339.45	1573.85
Upgrade 14" Acorn systems to 15" Optiquest monitor (3 year warranty)	(add) 25.00	29.38
Upgrade 14" Acorn systems to 17" Optiquest monitor (3 year warranty)	(add) 110.00	129.25
Upgrade 14" Acorn systems to High spec Iiyama 17" monitor	(add) 150.00	176.25

Phoebe RISC PC 2

THE FUTURE IS BRIGHT BUT (at time of press) NOT NECESSARILY YELLOW !
Cannon Computing and Cumana are very committed to the Acorn market place and do seriously believe there is a future for the Acorn platform and associated developed products.

Plus Digital Cameras, Software, Training, Extended Warranties, Networking. Etc.

FREE delivery on all Acorn computer systems.

For competitive Acorn education prices please call us as we generally match and in most cases beat the prices and specifications you have been given by other outlets.

CD-R CD-ROM Drives - CUMANA

!CDBlaze Software for the Acorn platform - This software supports CD-R / CD-RW and SCSI-3 MMC compatible drives - call for currently supported drives	79.99
CD-R Internal Panasonic 7502 SCSI drive & !CDBlaze Acorn software	299.00
CD-R External Panasonic 7502 SCSI drive & !CDBlaze Acorn software	349.00
CD-R blank discs (box of 10)	19.95
CDRW Internal Yamaha 4260t drive with !CDBlaze and PC software	329.00
CDRW Ext. (plastic case) Yamaha 4260t drive Inc. !CDBlaze & PC s/w	364.00
CDRW Ext. (metal case) Yamaha 4260t drive Inc. !CDBlaze & PC s/w	399.00
CDRW Blank Re-Writable CD's	24.95

Above drives are available separately please deduct £60.00 if required

Oscar Encore 24 speed CD-ROM Parallel external drive for Acorns & PC with bi-directional parallel port	169.00
Indigo 32 Speed CD-ROM IDE internal drives & CUMANA Acorn driver software for *A7000's and Risc PC's (after July '95)*	84.00

Syquest Parallel Port drives

SparQ 1.0Gb Parallel drive Acorn and PC version	189.00
SparQ 1.0Gb cartridge only	35.00
SyJet 1.5Gb cartridges (PC formatted) - can re-format for Acorn	55.31
SyJet 1.5Gb Parallel & SCSI External cartridge drive for Acorn & PC	239.00

32Bit Cumana SCSI 2 Card interface, as fast as any on the market £149.00 + vat

CA006 16bit SCSI Interface cards for A5000/A4x0	69.00
CA008 8bit SCSI interface cards for A3000/ A30x0	64.00

Printers
(including // cable, Acorn & PC drivers)

Hewlett Packard (HP) 690c colour inkjet (excludes photo real ink and case)	110.00
Hewlett Packard (HP) 890c colour inkjet (excludes photo real ink and case)	209.00
HP Deskjet 400L colour inkjet	75.00
HP 6L mono laser	236.00
QMS Magicolor² DeskLaser 600x600 DPI 8Mb ram colour laser	1795.00
QMS Magicolor² CX 600x600 DPI 24Mb ram colour laser	2299.00

Call for other makes, models and quantities.

Software Drivers - or complete solution?

!CDBlaze CD-R / CD-RW - driver for acorn	79.99
SyQuest EZFlyer, SparQ & SyJet - drivers for Acorn	(each) 60.00
Panasonic LF1500 6 speed Parallel PD - driver for Acorn	60.00

Centres of Technology Acorn

Trade & Educational customers are welcome.
Please call for separate prices on both Acorn and Cumana equipment.

Centres of Technology Acorn

Call us now on Tel +44 (0)1279-730800/730900 Fax +44 (0)1279-730809. sales @cumana.co.uk.
Cumana is a trading name of : Cannon Computing, Whitegate, Dunmow Road, Hatfield Heath, Bishop's Stortford, Hertfordshire, CM22 7ED. Partners: Nigel D. & Sara L. Cannon. AU/Dec '98.

portables

Psion mx's the Series 3

The 1st September saw the release of the latest incarnation of Psion's highly successful 3 series, the 3mx.

The new machine, thanks to some ingenious design engineering, is able to access data up to three times faster than previous 3 series. It comes with a backlit screen, 2MB of internal memory, a fast 115,200 bps serial port and an IrDA compliant infrared port. The machine is housed in a stylish variation of the standard S3 case design.

The 3mx runs the same operating system as previous 3 series machines, ensuring full compatibility with the large range of third party software that is available.

Psion are targeting the 3mx mainly at the business sector with companies that have a mobile workforce. However, it is an ideal machine for anyone not requiring the extra power and facilities of its big brother the Series 5. Psion are claiming one of the key advantages of the 3mx is the range of 'off the shelf' or 'custom developed' solutions that are available for business.

The 3mx is available now from all Psion dealers and is priced at £269.95. In the UK, Psion are offering the machine with a voucher enabling the user to receive a free copy of software worth up to £49.95.

Psion have also released PsiWin 2.2, a Series 3 version of their Series 5 connectivity package. The package allows the user to synchronise files with desktop packages such as Office 97 and Lotus Smart Suite. The program costs £49.95 with a cable or £29.95 without and is only available for Windows 95/98/NT4.

Street Planner

Palmtop recently announced the forthcoming release of *Street Planner '99*, a companion for their ever-popular *Route Planner*. Whereas Route Planner is perfect for planning routes between cities, the new Street Planner is designed to plan perfect routes within them.

The program will display perfect street maps showing every road, street or alley as well as showing one way streets, points of interest, train stations and more. It also allows you to zoom in and out of maps, locate streets by name and create overlays showing locations of interest.

The package contains vast quantities of data to help you plan your route including information on one way roads, private roads and U-turn restrictions, and will also calculate the quickest and shortest routes between locations, either by car or on foot. The program supports GPS devices.

The program will be available from October and a full review will follow as soon as I can get hold of a copy.



The EastEnders backdrop or Palmtop's Street Planner?

Pocket football

Artmedia has recently announced the release of their *Psion Soccer Manager* for the Series 5. The program, which has been available for a while on the S3, is a fully fledged soccer management simulation which allows the user to share in the pressures of being a top-flight soccer manager.

The package contains up-to-date statistics for the '98/'99 season covering over 90 teams and 2500 players. The game also features full financial management, realistic transfer and contract arrangements, mid-game management, various team formations and full match tactics.

Demo versions for both the S3 and S5 are available from Artmedia's web site at http://www.artmedia.com/ and the full versions cost £34.95.

ArtMedia : 0181-553 6322



Is this your dream team?

Purple power

Purple Software recently announced that their replacement database for the Series 5 will available anytime now. *PowerBase* has been designed to meet the specific needs of the Series 5 user. It is not just a conversion of the S3 package DataView Pro and will take full advantage of the EPOC32 operating system.

PowerBase is a relational database enabling you to manipulate tables, fields, types, groups and generate simple reports. It will also offer an element of compatibility with some leading database management systems.

Although details are not yet available on Purple Software's web site, they should be soon, so check out http://www.purplesoft.com/

Palmtop news

Palmtop have recently announced upgrades to three of their packages – Money (upgraded to version 1.2), Halliwell's Film and Video Guide (version 1.1) and Route Planner (version 1.3). The upgrades are available free of charge from their web site at http://www.palmtop.nl/ The Palmtop web site also contains numerous hints and tips for many of their packages and is well worth a look.

Message in a bottle

Psion finally got around to releasing version 1.5 of their Message Suite in early August and with it came, among other things, attachments, multiple mail boxes, a Word converter, a faster web browser and numerous bug fixes.

The package is available for download free from Psion's web site and is now supplied as a .SIS file which allows Acorn users to install the package using PsiRisc.

Installation is easy and the program uses all the existing configuration files so no further setup is required.

The web browser has been tweaked to be slightly faster and is better at handling poor HTML, although there is still no support for frames. The package does now support the mailto tag, allowing users to click on e-mail addresses within a web page.

The e-mail package is where most of the changes in this version have occurred. Multiple mailboxes are now supported so users with more than one internet account or users of accounts with multiple e-mail addresses can now receive their mail much more easily. Setting up multiple mailboxes is easy and each mailbox can be based on a previous one which is extremely useful if you are a Demon customer with 10+ mailboxes, as it saves typing in the details of your account every time.

Attachments are handled by a new option on the toolbar. When creating an e-mail, clicking on the attachment option allows you to browse your S5 and double clicking on a file turns it into an attachment.

Receiving attachments is equally simple. The program displays them in a new field and clicking on one either opens it or allows you to save it into the Psion's memory. If the attachment is a Word file, the program has an inbuilt converter which displays the file as plain text. The package also has better support for receiving faxes and now allows users to use faxback services.

Version 1.5 is a vast improvement on previous versions and is well worth installing. The only important feature still missing is frames support – maybe this will be rectified in the next release.

Contacting me

You can contact the Portables page by writing to me, Mark Taylor at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to *portables@acornuser.com*

Tel: 01924 254800 Fax: 01924 258036 E.Mail: sales@davyn.demon.co.uk
For a full catalogue visit our web site WEB: http://www.davyn.demon.co.uk

Acorn Computers

Acorn CENTRES OF TECHNOLOGY

A7000+	8m	1.2GB HD		£799.00d
A7000+	8m	1.2GB HD	8xCD	£849.00d
RiscPC 233	4m	1.2GB HD	8xCD	£956.00d
RiscPC 233	10m	1.7GB HD	8xCD	£1249.00d
RiscPC 233	34m	1.7GB HD	24xCD	£1249.00d

Extended Warranty

A7000 / A7000+ 3 years	£94.00
A7000 / A7000+ 5 years	£188.00
RPC StrongARM 3 years	£235.00
RPC StrongARM 5 years	£470.00

Monitors

Acorn AKF60	£264.00d
Acorn AKF92	£640.00d
Iiyama 17"S701GT .26dot	£379.00d
Iiyama 19"S901GT .27dot	£723.00e
Iiyama 21"GT .27dot	£986.00e
Samsung 15" 500s .28dot	£159.00d
Samsung 17" 700s .28dot	£269.00d
Samsung 17" 700p .26dot	£379.00d
Samsung 19" 900s .26dot	£539.00e

All Samsung Monitors come with a 3 Year on Site Warranty

Memory

A7000+ 16Mb EDO RAM	£29.00b
A7000+ 32Mb EDO RAM	£45.00c
RiscPC 16Mb RAM	£29.00b
RiscPC 32Mb RAM	£45.00c
RiscPC 1Mb VRAMsimtec	£59.00c
RiscPC 2Mb VRAMsimtec	£95.00c

RPC Upgrades

2 podule Backplane	£34.00a
486-DX4-100 PC Upgrade	£230.00d
586-100 PC Upgrade	£350.00d
586-133 512k PC Upgrade	£360.00d
Access+ Card	£139.00c
Strong Arm upgrade 233	£289.00c
Audio Mixer	£39.00a
Movie Magic	£279.00c
Risc OS 3.7 Chips + Software	£58.00b
Second Slice *no PSU*	£90.00d
Second Slice *with PSU*	£116.00d
Sound Card	£69.00b

Hardware Upgrades

170mb IDE 2.5" HD	£65.00c
340mb IDE 2.5" HD	£95.00c
6.4gb IDE 3.5" HD	£169.00c
4.3gb SCSI 3.5" HD	£299.00c
Lark Midi Sound-Sa.	£172.00c
Risc OS 3.1 Upgrade Chips	£30.00a
RiscTV *(Irlam)*	£295.00c
Teletext module for above	£45.00a
SCSI 16bit	£110.00c
SCSI 2 32bit (power-tec)	£158.00c
SCSI 3 32bit (power-tec)	£205.00c
TV Tuner + Teletext	£159.00c

All Upgrades fitted free if ordered with Computer else £18.00

Scanners

SPECIAL OFFER
Plustec OpticPro 4830p

A4 Colour Flatbed Scanner 300x600 DPI	
Scanner + PC Software	£69.00d
Above + Imagmaster/Twain	£99.00d
Epson GTX5500 scsi	£239.00d
Epson GT9500 para/scsi	£539.00d
Image Master/Twain Driver	£35.00a

Printers

Canon		
BJC-250	(colour)	£109.00d
BJC-4300	(colour)	£139.00d
BJC-4650	(A3 colour)	£299.00d
BJC-620	(colour)	£229.00d
Epson		
Stylus 440	(colour)	£129.00d
Stylus 640	(colour)	£179.00d
Stylus 850	(colour)	£289.00d
Stylus 1520	(A3 colour)	£639.00d
Hewlett Packard		
DeskJet 420L	(colour)	£99.00d
DeskJet 690C	(colour)	£189.00d
LaserJet 6L	(Black)	£319.00d
Calligraph		
A4 1200 Laser	(black)	£1099.00d

Printer Inks/Refills

COLOURS INKS AVAILABLE
Jet Black, Cyan, Magenta, Yellow, Brown, Dk Green, Lt Green, Dk Blue, Dk Red, Lt Red

Inkjet Refills are an economical way of re-charging your existing cartridge All inks come complete with gloves, syringe and easy to use instructions.

Single	20ml Any Colour	£6.00a
Twin	2x20ml Any Colour	£10.00a
Bulk	125ml Any Colour	£21.00b

'CartridgeMate' A new and easy to use cartridge refill system for HP 51626A high cap. cartridges

A refill system with no mess

Comprises: CartridgeMate & 2 x 40ml Ink Tanks Cartridge not included £30.00b
Ink Tank 2 x 40ml £20.00a

We also carry a large stock of inkjet cartridges and ribbons

Printable Items

Colour'n Wear (2 white Baseball Caps + 3 transfer papers)	£10.50b
Colour'n Wear (2 white T Shirts + 4 transfer papers)	£13.50b
Colour'n Wear (4 transfer papers only)	£9.00a
(10 transfer papers only)	£13.50b
Design & Print Mouse Mat	£4.00a
Col Inkjet matt photo white paper 25 sheets x 120gms	£5.50b

Software

Acorn C++	(Acorn)	£150.00c
ArtWorks	(CC)	£99.00c
Bitfolio 7 Clipart CD	(Lino)	£40.00c
Doom Trilogy 3xCD	(RCom)	£33.00a
Descent	(RCom)	£30.00a
Empire Soccer	(Empire)	£24.00a
Impression Style	(CC)	£79.00c
Personal Accounts 4	(Apricot)	£40.00a
Prophet 3	(Apri)	£163.00c
Simon the SorcererCD	(G/W)	£33.00a

These are just a small selection of Software ring for details

Spares & Repairs

A300/400		
backplane 2/4 pod	S/U	£30.00b
memory upgrade 2mb	new	£79.00a
memory upgrade 4mb	new	£89.00c
Power Supply	Refurb/Exch	£40.00c
A400/1		
backplane 4 pod	S/U	£30.00b
Floppy Drive	S/U	£30.00b
memory upgrade 1mb	new	£35.00a
Power Supply	Refurb/Exch	£40.00c
A3000		
Floppy Drive	S/U	£30.00b
Keyboard	S/U	£20.00b
memory upgrade 2mb	new	£39.00a
memory upgrade 4mb	new	£65.00a
PCB	Refurb/Exch	£90.00d
Power Supply	Refurb/Exch	£30.00c
Power Supply	Refurb	£40.00c
A3010		
Floppy Drive	new	£89.00c
Keyboard	S/U	£20.00b
memory upgrade 1-2mb	new	£34.00a
memory upgrade 1-4mb	new	£65.00a
PCB	Refurb/Exch	£120.00d
A3020		
Floppy Drive	new	£89.00c
Keyboard	S/U	£20.00b
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
A4000		
Floppy Drive	new	£90.00c
Keyboard (compleate)	new	£99.00b
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
Power Supply	Refurb/Exch	£40.00c
A5000		
Floppy Drive	new	£99.00c
Keyboard inner	S/U	£20.00b
memory upgrade 2-4mb	new	£79.00a
PCB	Refurb/Exch	£139.00d
Power Supply	Refurb/Exch	£40.00c
RPC		
PCB MK 2	Refurb/Exch	£149.00d
Power Supply	Refurb/Exch	£40.00c
Pocket Book		
A,M,or PC+-Link	(each)	£59.00b
Parallel Link		£29.00a
Power Supply		£14.50b
Flash SSD 1MB		£119.00c
Fits All Computers		
IDE/CD interface	new	£69.00c

These are just a small selection of new and refurbished spares ring for details

Bargain Basement

Alderbarron	(Evolution)	£5.00a
Boxing Manager	(Krisalis)	£5.00a
Frame-It 1 or 2	(Davyn)each	£5.00a
Publisher irregular frames		
Hero Quest	(Krisalis)	£15.00a
Landmarks full range	(LL)each	£28.00a
Magic Pockets	(BitMap)	£13.00a
Music Box	(Topo)	£20.00a
Number Tiles	(Topo)	£17.00a
PhotoBase 1930s,50s,60s	Each(LL)	£39.00a
Prime Mover	(Minerva)	£20.00a
Pro Artisan 2	(Clares)	£90.00c
Science Series CDx3	(YITM)	£40.00a
Small	(Virgo)	£15.00a
SmArt	(4Mation)	£37.00a
SmArt Files	(4Mat)each	£17.00a
SmArt File Mod.Lang.	(4Mat)	£21.00a
Tiny Puzzle	(Topo)	15.00a

How To Order

Cheques: should be made payable to **Davyn Computers**

Credit Cards: you may also pay byVisa, Delta, Euro, Switch, Electron, or Master Card. We normally make no charge for this, and take no payment until goods are ready for dispatch, We need the card holders address and telephone number, card number and issue number if any and the expiry date.

Carriage: charges are as follows

a	Small Recorded	£2.00
b	Medium Recorded	£3.50
c	Med/Large Recorded	£5.00
d	Courier	£10.00
e	Courier Large	£15.00

Official Orders: are welcome from UK education and government institutions (invoices are due for payment within 14 days and are subject to carriage and late payment charges).

VAT is included:

Order Address: please send your orders to;
Davyn Computer Services
'The Workshop'
off Princess Street, Sandal, Wakefield, West Yorks. WF1 5NY

Opening Hours:

Monday	9.30 - 5.30
Tuesday	9.30 - 5.30
Wednesday	9.30 - 5.30
Thursday	9.30 - 7.30
Friday	9.30 - 7.30
Saturday	9.30 - 5.30

Special Offer

Although we will not be exhibiting at Acorn World, we are still having a silly show offer !

Buy RiscCAD before the end of November at a special 'show' price of £175.00 inc VAT.

New features include:-

- Faster scrolling
- Arc complement
- Dynamic stretch
- Polygon by one side
- Line normal to circle
- Perimeter calculation
- Enhanced chamfer tool
- Symbol/template viewer
- Enhanced text dialogue box
- Change dimension accuracy on the fly

RiscCAD Professional®

!!@!
ACORN YOU

£175 inc VAT

RELEASE 7e READY NOW ! UPGRADE AVAILABLE

Terms: All products, prices and specifications are offered in good faith and are subject to change without notice. We Process all orders immediatly, but suppliers do sometimes keep us waiting. Goods are guaranteed but are not supplied on approval. Returns and cancellations can only be accepted by prior agreement and there may be a restocking and administration charge A full copy of our terms are available upon request. E.&.O.E 7th October 1998

business

From little acorns 2 – (the sequel)

Longer standing (or suffering) readers may remember the article of that title which appeared in *Acorn User* and featured businesses which were run using RISC OS computers. I recently asked for any other readers who ran an Acorn-based business to let me have their details with a view to an occasional column on this page.

Thanks to those readers who responded: this month we start the series. I have decided to let people tell you themselves about their businesses, the software they use, their hopes for the future, and so on. A slightly risky decision, but these are real users and they have real concerns. Obviously many of them are swimming gallantly against the PC tide.

This month two very different businesses:

Going with the flow

This message comes courtesy of a Psion5 because Argonet's mail package doesn't support the multiple mail boxes that they provide. However, the computer in front of me is a StrongARM Risc PC, the one to my right is the same, there is another in the next office and the one in a box behind me will be going to one of our customers in a few weeks.

In addition there is a PC laptop by my elbow (bought it before the Peanut was released, and I need a PC and it does run Fireworkz for Windows) and a Pentium in the next office. Our network server is also a PC. Two of the Risc PCs have 586 cards but I don't make much use of them. As you can see Acorns are equal in number to PCs here but they are certainly used more.

We are Porpoise Viscometers Ltd – http://www.porpoise.co.uk – a rather eccentric company manufacturing specialist instruments for the process (mostly chemical) industry. There are just six employees and we only produce a few machines a year, each costing between £20k to 70k. We export all over the world and with the majority of our machines we also sell a Risc PC. I don't think we are unique in this (I've met a manufacturer of radar systems who uses Risc PCs as the front end) but we are certainly unusual.

All the office work is done on Acorns, and so is some of the drawing and design work, and we write our own software for the Acorns we sell on. This software allows the user to control the viscometer and display graphs of results and then archives them.

The reason we sell the Acorns on is largely historical. The first versions of the software was written by the MD's son on a A310 and we've never managed to change to a PC. The Acorn is very nice to use and program but if I could wave a magic wand and convert our software to Windows I probably would because it would be more familiar to our customers. I would go on using an Acorn for office work though, and I own one myself so I must like them.

Mark McLean

Football Crazy



In off the Post, provides football management play-by-mail games and is run almost totally by Acorns. I usually use a PC for internet access, and accounts, and scanning, but that's about it. At the office there is a network of six Risc PCs, using software I developed myself. I am about to launch an online game via our new website – http://www.iotp-online.co.uk – but we are still searching for a decent Acorn ftp program. I'm also about to construct a Linux box to act as a fileserver for the network. About the only third party software we use is AddressIt from Fabis (which I've been waiting a year for), Impression Publisher for letters and postscript files to be converted to four-colour film for advertising, DiscDoctor in case of a hard drive crash and so on, as well as the odd shareware utility such as pctools.

My first computer in 1982 was an Acorn Electron, followed by a BBC B, an Archimedes A310 in 1987, then my first Risc PC in 1994.

Peter A.Wilson

Office spread

A recent correspondent raised my hopes of an MS Office 98 beater for the Acorn. At last I thought, a spreadsheet to rival Excel, a relational database as good as Access. Alas it was not to be – the only close relation to the MS bloatware is an application launcher like the one which you can have on the Windows 95/98/NT desktop. Unfortunately, this one is not even that good: the real one goes horizontal or vertical if you put it at the top or side of the desktop; this one remains firmly vertical. Still, if you need yet another application launcher check out http://www.everymans.com/acornoffice/

Colton software revived

At last some good news on the business software front – I was beginning to think it would never happen. Abacus Training, run by Gerald Fitton, has acquired the rights to all Colton Software products. This includes the excellent PipeDream and the could-be-excellent FireWorkz. FireWorkz had the potential to be the ultimate office suite for the Acorn and Gerald has said that development will continue on this product. Perhaps we can look forward to a decent suite of software (spreadsheet, wordprocessor and database) at long last. Good luck to Gerald.

Abacus Training
gerald@abacusline.demon.co.uk
http://www.abacusline.demon.co.uk

Acorn business

It is said there are only two reasons for business failure: mismanagement and gross mismanagement. One could say that Acorn haven't failed yet, but wiping out a significant chunk of one's business in the hopes you won't have so many losses in future doesn't strike me as "success". More like "desperation".

If this savagely trimmed remnant makes it past another year it will be an impressive feat though it will make little impression on the Acorn market now they've deserted it.

Time will tell.

Contacting me

You can contact me, Mike Tomkinson, by post at the usual *Acorn User* address or by dropping me an e-mail at: *bizniz@acornuser.com*



Acorn User December Cover Disc

Security devices

This month we have a selection of programs that you can use to improve the security of your computer system. *Nuke* and *PGPlok* are held in zip archives with the ability to verify their validity using PGP signatures – both for the author and for the distributor from where they came, Nat Queen – as described briefly in last month's issue.

Nuke

Warning: Files cannot be recovered in any way after being nuked. It may be wise to practise on an unimportant floppy or RAM disc before putting this program to serious use. In addition it only works on E-format discs, not on older or newer (RISC OS 4) formats.

If you never have any data that is sensitive in some sort of way, you may as well delete *!Nuke* but if you do have such data, then read on.



In RISC OS deleting a file, only removes its entry from the directory structure. The data itself is left totally intact until it's (partly) overwritten by some other file. Until then you can use many utils to recover (at least part of) the data on your disc. So can anyone else.

!Nuke overwrites all selected files (and recursively into selected directories) before deleting them. So even disc editors or *undelete* utilities can't recover the data. *!Nuke* can also wipe all free space on your hard disc. Free space usually contains fragments of old ('deleted') data.

With very specialised (military) equipment it should be possible to recover faint magnetic traces that are "under" the current data until it's been overwritten five times. *!Nuke* allows up to 99 overwrites for the extremely paranoid but even one overwrite will prevent >99 per cent of the people from recovering the data.

So I made this the default setting and suggested possible values of:

1	fast but less secure
7	slow but probably all you ever need
10	very slow, very secure

Triple-check everything before clicking the *Nuke* button.

PGPlok

This enables you to use PGP to encrypt all your sensitive data or to retrieve it, with just a double-click (plus a pass phrase in either case). You can encrypt and decrypt not only single files, as when using PGP itself, but a whole directory structure in one operation.

Not only does the encryption hide the data, but also the nature of the directory structure, the filenames and so on.

Many commercial programs claim to provide 'virtually unbreakable' encryption without revealing the encryption method. As Phil Zimmermann said in his PGP manual "Beware of snake oil". The encryption system in !PGPlock relies solely on the well established PGP, whose source code is freely available and has been scrutinised by numerous experts – and it's free.

As an added bonus, *!PGPlock* makes use of Sergio Monesi's powerful *Nuke* to erase all traces of the original files from the disc after they are encrypted.

RNDpass

There are many encryption programs around, some with algorithms that are virtually unbreakable. So an attacker would look for the weakest link: the password. A password needs to be as strong as possible but easy to remember. *!RNDpass* tries to give some ideas for your password.

The program is already set up for English. The word list is in the file Wordlist. This may be replaced by any other ASCII word list. You may alter the list too. If you speak more languages, you may want to merge different lists. The program accepts anything in ASCII. Some additional word lists, including lists in Dutch, German, French and other languages, can be found at:

`ftp://sable.ox.ac.uk/pub/wordlists`

Some programs allow you to enter only one word for a password, others allow whole sentences. Those are called (surprise) pass phrases.

If you need a password, this program may seem to be of no use to you. A single word is to easy to guess. But you can simply generate a pass phrase and then strip the spaces.

Regular items

- The final CamLETS database system
- Rambles: Fetching BBC Micro ROMs
- Run the Risc: Creating a PIC serial port
- Plus all the *INFO programs.

Disc information

The software on the cover disc has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on the disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 3.001 from Pineapple Software

Archimedes Public Domain Library

Public Domain, Shareware and other low cost hardware and software for Acorn computers

All prices include VAT and UK carriage except hard drives add £5 for internal drives, £8 external

Association of Shareware Professionals

Registered Developer

This is only a fraction of what we have available. We also have thousands of discs full of PD and Shareware and around 500 discs of Acorn format clip art. For a full catalogue on 800K or 1.6Mb disc please send 50p or two 1st class stamps or visit our web site.

APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN

Phone: 0181 778 2659 *Fax: 0181 488 0487* www.apdl.co..uk/

DATASTREAM · THE Datafile · VISA · Arch Angel The PD Library

3.5" IDE Hard Discs

	Drive	Plus i/face
210 Mb	£42	£81
420 Mb	£52	£87
540 Mb	£59	£107
850 Mb	£71	£118
1.1 Gb	£80	£127
2.1 Gb	£91	£138
2.5 Gb	£97	£144
3.2 Gb	£99	£146
4.2 Gb	£116	£163
4.2 Gb 5¼"	£114	£161
5.1 Gb	£122	£169
6.3 Gb	£137	£184
8.2 Gb	£168	£215
11.8 Gb 5¼"	£204	£251

'Plus i/face' price includes an APDL fast IDE interface.

2.5" IDE Hard Discs

	A3020	3010/3000
30 Mb	£36	£79
60 Mb	£49	£99
80 Mb	£59	£109
120 Mb	£67	£117
170 Mb	£72	£122
210 Mb	£84	£134
250 Mb	£89	£139
330 Mb	£94	£144
420 Mb	£99	£149
512 Mb	£123	£173
800 Mb	-	£178
2.1 Gb	-	£197

A3010/3000 includes APDL IDE interface, A3020 includes fitting kit

SCSI Hard Discs

210 Mb		£35
280 Mb		£44
420 Mb	h/h	£55
540 Mb		£68
1 Gb	h/h	£79
1 Gb		£94
4.2 Gb	h/h	£159
4.2 Gb		£186
8.7 Gb	h/h	£329

'h/h' indicates half-height approx 1½ inches high, others are 1" high.

IDE CD ROM drives

Internal

Drive with all cables and drivers for RO 3.6+ where required

16x	£45
24x	£50
32x	£55

Drive including APDL IDE interface

16x	£92
24x	£97
32x	£102

External

Drive in case with power supply and including an APDL IDE interface. Probably the best way to fit a CD to a pre- RISC-PC machine.

16x	£149
24x	£154
32x	£159

CD ROM driver software

Works with most ATAPI CDs including Goldstar, Hitachi, Lite-on, Mitsumi, Sony, Panasonic, Samsung, Pioneer, Toshiba, Sanyo, NEC, etc. Includes CDFS etc. so can be used with RISC-OS 3.5. Intended for the RPC but can be used with an A5000 but as the drive can't be fitted internally you will need to keep cables short

Only £8 inlcuding UK carriage or £7 when ordered with a drive

APDL Public Domain, Clip Art and other CDs

APDL PD-1 — The best PD CD from the best PD library. Over 1,800 programs and utilities, more than 100 novels, etc. No games, clip art, music, or other non-serious stuff. **only £12.50**

Both for just £22

APDL PD-2 — Around 700 games and novelties, over 250 games cheats and over 200 demos, plus over 2,000 music files and more than 550 digitised sound samples. **only £12.50**

DTP-1 and DTP-2 — Each have over 500Mb of clip art files, all ready to use in Acorn Draw, Sprite or Artworks format. Ideal for use in education. **only £15 each**

DTP-3 — The third highly acclaimed APDL clip art CD. More than 720Mb of material. Great for schools or anyone who needs a huge collection of clip art at a sensible price. **only £17.50**

DTP-1 plus DTP-2 plus DTP-3, just £40

DTP-4 — Our new clip art CD. Over 12,000 clip art files, plus more than 400 Artworks files and 170 high quality colour pictures. All catalogued and complete with thumbnail **only £19.50**

Games CD 1 — A collection of twenty of the best PD games of all types. Ready to run direct from the CD on almost any machine. Hours of fun for an unbeatable price. **only £7.90**

Education Resources — A CD from APDL especially for schools. Has all the things we know you want. More than 5,000 Acorn format clip art images, hundreds of e-texts, over 300 popular and useful programs. . . . **£16.50** **Ten for just £79**

Earth in Space — Pictures, databases, information on stars, planets, moons, space missions, etc. etc. A huge amount of data at a realistic price. **only £9.90**

Wizard Apprentice — Have you got what it takes to become a Wizard? 100 levels of this great game with superb graphics and sound. RISC-PC only **new low price £14.95**

Generation Design collection — New version now has eight games. AlfaXL5, Pharoahs Secret Tombs, Last Cybermoch, Sea Trek, Caves of Confusion, Robocatch, and two new additions, Gold Run and Jewels of Jezabar. Also available on disc. **£17.50**

APDL ideA fast IDE interface

We have just introduced a new version of our famous IDE interface.

- No complicated setting up. It's self-configuring so just plug it in!
- Uses DMA (Direct Memory Access) on Risc PC. More than twice as fast as the built in IDE interface or others which don't use DMA.
- Includes CDFS and ATAPI CD drivers for many popular CD ROMs.
- Four devices, any combination of CDs and hard drives.
- Up to 8 partitions, so you can have large drives on pre RO 3.6 machines
- Software in flash EEPROM for easy update, including VProtect for earlier machines.
- Can use DOS formatted drives or removable discs.
- Supports the new range of Syquest SparQ low cost 1Gb removable drives.
- Connectors are available for external drives or CD ROMs
- Fits A310, A400, A5000, A540, A7000 and any RiscPC.

All these features for the incredibly low price of just £52

A version to fit the A3000, A4000, A3010 or A3020 is also available. This has all the above features, supports two internal and two external devices, and costs just £67

Risc PC RAM

32 Mb SIMM	£33.00
32 Mb High Clearance	£39.00
16. Mb	£17.50
2 Mb VRAM	£67.00
1 Mb to 2 Mb exchange	£47.00

Datafile PD CDs

PD CD - 3	£8.50
PD CD - 4	£12.50
PD CD - 5	£8.50

Various games

Emotions	(RPC only)	£14.95
Flying High	(RPC only)	£14.95
Fire and Ice	(not S/Arm)	£8.50
Hero Quest	(not S/Arm)	£7.50
Quest for Gold		£6.00

Syquest drives

The 1Gb Syquest SparQ drive is the ideal solution for backing up larger hard drives where old technology like a Zip drive just isn't realistic. It's big enough to hold a lot of data, and with our interface it's faster than the built-in hard drive on a RiscPC so you can use it as an extra hard disc. Discs are much cheaper than anything of comparable size, just £29. The drive can be fitted in a 3½" or 5¼" drive bay.

SparQ internal IDE drive complete with TWO discs and APDL fast IDE interface. Solve all your backup problems for just £209

NEW - APDL printer port Syquest drive

At last, you can now have a 1Gb Syquest SparQ printer port drive at a realistic price. It isn't as fast as the IDE version but you can fit it to any machine with a bi-directional printer port (ie. anything with a hi-density floppy drive) and move it between machines. With Acorn and DOS driver software. Special introductory price, just **£199**

NEW - Very fast SCSI interface

We are now UK agents for the ACE Connect 32 SCSI interface. We intend to produce our own, improved, software for this, but in the meantime we have a limited number at an incredible price. These are *very* fast, in fact, the fasteset SCSI interface I've tested at *any* price.

Connect 32 SCSI interface - £109

ACE 586 PC cards

Available with 128K cache from just £199 or 512K cache from £299. We can offer a trade in against your old card, which makes it even cheaper. Good performance for Windows at a sensible APDL price.

General software

Faster PC - £20 The alternative XT PC emulator. Works on any model with 2Mb RAM from an A3000 to a Strong ARM Risc PC.

PowerBase - £15 Ready-to-use version of the very popular and easy to use Shareware database. With examples, tutorials and printed manuals. Better than most products costing many times the price. This will do everything that 99% of database users need.

We are now the distributor for Graham Crow's Desktop Suite

MenuBar - £15 The very best pull-down menu system. An absolute essential for any hard disc user. You can switch between up to 30 different menu bars.

Tiger - £15 Lets you use very long descriptive filenames. Unlike some products this is very robust as it works in parallel with the filer so can't corrupt discs.

WorkTop - £15 Switch between up to 30 different working environments with a single mouse click. Stars up the tasks you require, opens directories, changes screen mode, it's just like moving to another computer. An invaluable productivity tool.

ProCopy - £15 The next best thing to an expensive auto loader. Can format, copy and verify discs and save the contents as a disc image on your hard disc. Works with 640K, 800K and 1.6Mb Acorn format and 720K, 1.44Mb and 1.7Mb DOS format. If you need to produce multiple copies of a disc you need ProCopy

At face value



Nicholas van der Walle of Astute Graphics peels back the layers of the latest Photodesk offering

Apparently this is the first review of any *Photodesk* offering to grace the pages of *Acorn User*. I find this quite hard to believe, if only due to the sheer success of this package and the way in which it has convinced all who have used it in earnest over the last years. Now in its third generation, I will attempt to do it justice and reveal all behind the new layers facility.

Layers is not new in concept. In the PC/Mac market the near namesake product entitled *Photoshop* by the renowned professional graphics developer *Adobe*, has been living with this capability for a number of years. Whereas *Photoshop* is now coming to terms with being version five, *Photodesk* has to contend with the catching-up game at version three. However, regardless of the features displayed on all of the PC/Mac counterparts, *Photodesk* always seems to maintain a very large trump up its sleeve. That trump being user-friendliness and efficiency.

Leading on from efficiency, I may as well get it out of the way now as people seem to be obsessed with it, regardless of reality. Speed. You know the argument (especially if you happen to keep a close eye on Internet newsgroups such as c.s.a.misc) – PC's have 400MHz, a maths co-processor, fast RAM and the ability to melt your mouse at a hundred paces. Well, when concerned with bitmap editing, which is precisely what *Photodesk* is concerned with, the only thing that matters for 95% of your work is that of being able to shift huge amounts of data around like lightning. "So...", everybody shouts, in unison, "the current Risc PC is obsolete for this task!" (Cue technical ramblings over a 16MHz memory bus and all that) Not so. All will be proven by the time you reach my last words. Reality is not always such a clear-cut case.

What's new, Doc?

We have seen version one and two roll off the production line for many years now, so what's new about *Photodesk 3*, apart from layers? Well, truth be told, not much really. At first glance, the toolbar (Figure I), which for any application is a good point from which to look for new toys, is identical to version two. It is only when you delve into the montage mode (Figure II), by clicking on the scissors icon, that a single new icon appears. Once you learn that even this icon was placed there in order to primarily serve the layers facility, you get the feeling that you are back at square one.

There is only one more item, apart from layers and a four-pointed arrow icon that comes gratis with *Photodesk 3*. And, you guessed it – it was included to support layers. This other feature is the inclusion of the otherwise optional extra file import/export plug-ins, which until recently retailed for around £20. This additional facility now allows you to read and write *Photoshop* files natively, retaining the layer information. In fact, if you intend to use layers all the time, the *Photoshop* file format has now become ➤



Figure I: The unchanged toolbar

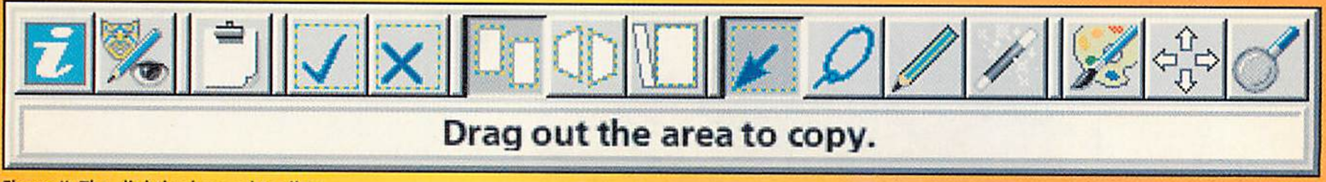


Figure II: The slightly changed toolbar

your standard one, leaving the previously supreme TIFF format to single plane images.

To add to the sense of occasion, the *Photoshop* file format has now been tweaked over and above the previous offerings by saving all data in a compressed format, so as to reduce disc space. This means that it is now more efficient than the non-LZW-compressed TIFF format saved out by *Photodesk*. Not only this, but you now also have the ability to load in and save out in Targa and BMP formats without having to go through third party importers and exporters. Finally, for the file format additions, *Photodesk 3* includes the more advanced *ArtWorks* and *Draw* file importer which now can be set to create a new page at the correct scale. Both vector formats will be rendered anti-aliased on either a blank or a previously painted page.

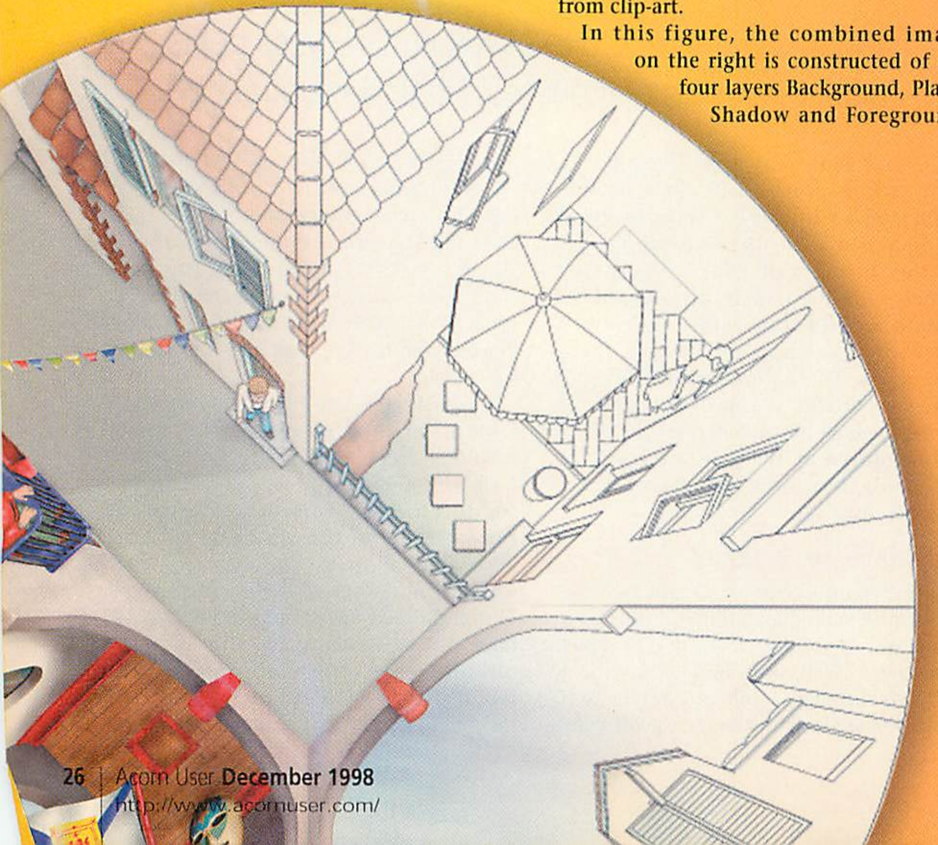
Peeling back the surface

So, having eliminated the possibility of playing with alternative new "toys", layers will have to consume this review. This, however, is no bad thing as the one word is probably *the* singular most powerful feature of *Photodesk 3* and pushes a previously diverse package into yet more graphical arenas.

Firstly, it is best to explain the concept of layers to those who may be unfamiliar with it. Layers is a standard technology when it comes to vector-based applications such as ArtWorks and CAD packages – in the creation of complex images it is almost essential for such packages – what differs in bitmap packages with layer capabilities is that any particular layer can interact with the ones "beneath" it.

Layers may be looked at like a series of transparent acetate sheets as used in the creation of animations. Each sheet is of identical size and placed on top of each other. With computers, the ability to alter the level of opacity of each sheet or layer is also present as well as, in the case of *Photodesk 3*, how the images "painted" in the sheet react with the image(s) beneath. See Figure III, generated from clip-art.

In this figure, the combined image on the right is constructed of the four layers Background, Plane, Shadow and Foreground.



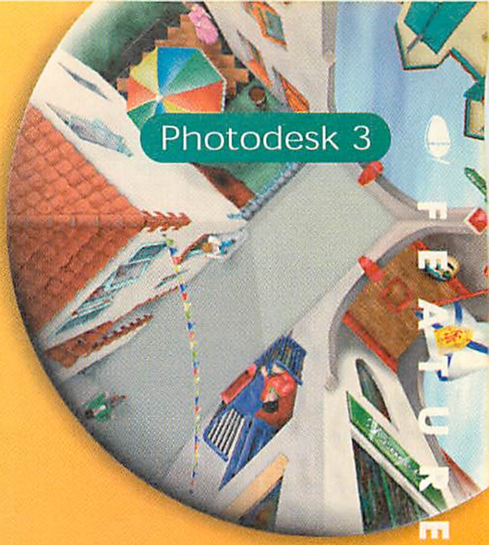
In order to render the combined image, each layer is placed directly above the previous one and where there is no "painting" on a layer, the image behind can be seen. One extra setting on this particular example is the reduction in layer opacity for the shadow, which will be explained later.

Adding function

The approach to layers outlined above is all very well for manual work, but *Photodesk 3* allows users to take advantage of the power a computer can offer. To begin with, when adding a layer to a previously "flat" image, you are instantly doubling the size of the memory required to store such data. This equates to a higher specification machine being needed in terms of RAM and, more critically, fast hard disc access. To this end, the standard IDE solution that came with all of Acorn's later machines are shown their shortcomings in respect to sheer data moving ability.

At this point it's time to return to the initial comment of speed and the viability in using a four-year old machine such as a StrongARM'd Risc PC. In real terms a relative lack of RAM is not an issue with *Photodesk* – unlike its PC/Mac counterparts which consume RAM for breakfast, lunch, dinner and supper. The RISC OS solution's apparent efficiency can be proven by the fact the front cover image of this magazine at around 120Mb in size, when an undo buffer is taken onboard, was completed from start to end on Astute Graphics' StrongARM Risc PC with "only" 24Mb of RAM. What saved the day, and an addition which is highly recommended for this level of work, is that a fast harddisc was accessed through an equally fast SCSI card which helped the built-in virtual memory system.

In use, such a system setup was highly usable and equated to a typical 15Mb image having an additional three layers added on top, complete with equal amounts of undo buffer. It is granted that large movement panning around with instant screen redraw is not possible without putting, say, a 128Mb memory extension into the Risc PC, but even this can now be justi-



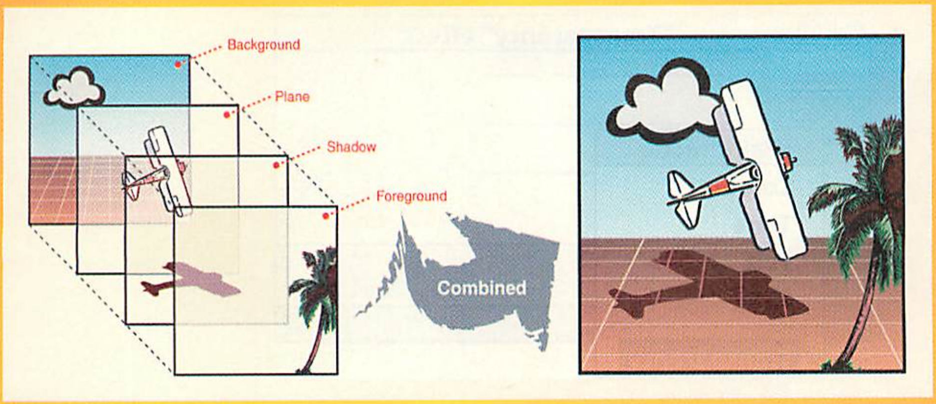


Figure III: How layers work

fied if you wish to use *Photodesk* on a daily basis.

New panes

So, OK, the fundamentals have been covered, but what about actual visual feedback for the extra upgrade or new purchase money? Well, layer control is found indirectly through the Channels window where a new button can be found at the bottom. This, in turn, leads to the all-new layers control window (Figure IV). Control over layers is absolute from here giving you the ability to create, delete and alter a layer's attribute. Such attributes include layer opacity (with 0% making the layer invisible) and render modes (such as Replace, Add, Subtract, Multiply and so on) which control the way the layer reacts to the image below.

You will usually find that your use of layers will be vastly similar. Most layers will have 100% opacity set with a new transparency "colour" coming into action, if needed, in order to unblock certain areas of the image (described later). You may also start by messing around with the rendering mode, but will usually find that the standard Replace mode is what is required. Common variations will be in the form of creating a shadow which can now be done by cutting the Y-axis flipping an existing image, pasting into a new layer (single click-operation) and lowering the opacity level to, say, 50% just as with the original plane example above.

What is good about the approach taken by *Photodesk* on what is an involved subject is that such operations are effortless due to an exceedingly well laid out menu/dialogue box system. This extends to the ability to drag-and-drop layers to the clipboard, altering the order of layers and even being able to preview a layer at its last fixed state (each layer having its own undo buffer) in the layers window. All operations and end-effects are shown in realtime without delay and the feeling of user involvement is maximum.

Another feature on offer in the layers window is the ability to assign any mask channel to any layer. Therefore if you have, say, three separate mask channels defined, it is possible to use one as a common channel so that a specific area to be left untouched could be applied to all layers. Or the option is available to give each layer with an individual mask. Add to this the ability to specify any other channel (for example, Red, Green or Blue) to be masked out and the possibilities are endless.

On an individual layer basis, the layers window also offers visibility/editing control, represented by the eye, pencil and arrows icons. Firstly, the eye is pretty self-explanatory and allows individual layers to become visible or invisible, so as to not distract or possibly aid the work you are currently doing. Secondly, with the pencil tool selected, you are able to alter the contents of only that particular layer. This therefore disallows the user to paint on two layers simultaneously, which in practice is a good thing. Finally, the arrows or montage icons allow you to state whether any operation such as move and rotate will affect that particular layer, with any combination of layers being possible at any one time. This is where the single additional iconbar icon (Figure II) comes into action, allowing you to scroll the layer or layers in an X-Y direction.

One final note which is of direct relevance to this window is that of layer visibility. It has been stated quite clearly in the rudimentary on-line HTML-based manual supplied with the upgrade package, that any layer above the one currently being edited (depicted by the depressed pencil icon) will be hidden. To directly quote:

"When using Photodesk with layers, it will become clear that it is only possible to (simultaneously) view layers below the current layer being operated on. This is unlike the layers system on Photoshop, where it is possible to paint behind other features. This would, however, seem a rather confusing function – why paint behind something if what you are doing is hidden by the feature you are painting behind?"

Unfortunately this apparent aid is a large restriction. There are occasions, in fact many of them, where seeing the layers on top of the currently edited one is beneficial, if not vital – it should be included at least as an option to the user. Currently, the way to overcome this is to use the bottom left icon (right window, Figure IV) which resets the top layer as the editing one and ensures that all other layers are visible. This is not ideal as you then have to select the layer you were in the process of editing, once again, thereby losing visibility of the upper layers.

Transparently obvious

A quite hidden feature of layers is the ability to paint in a "transparent ink". This is a ➤

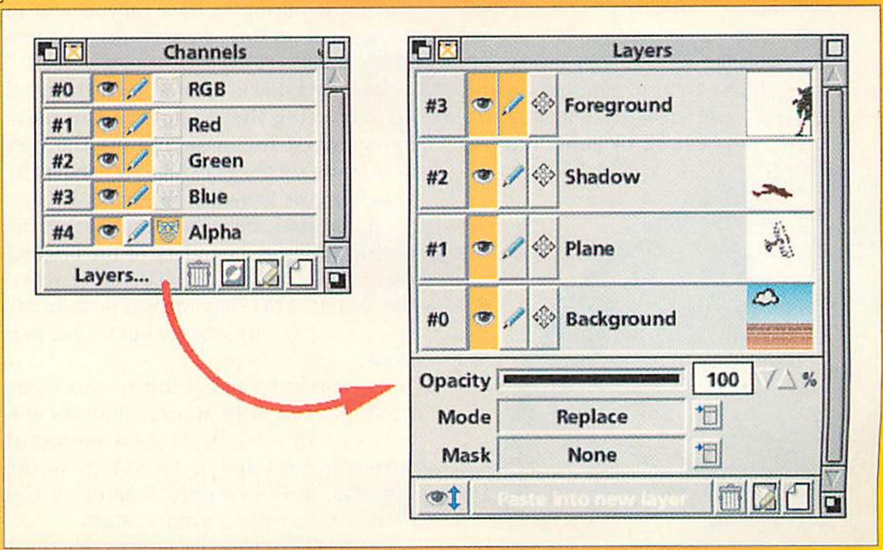


Figure IV: Individual channel controls for layers

new feature to *Photodesk 3* as it wasn't relevant to previous non-layered versions. Found in the paint "colour" window, the new mode "Transparency" has been added to the list of Colour, Tone, Tint and Filter (Figure V). What is different from this mode and any of the aforementioned is that all options in the paint window are taken away from you – especially any variation in transparency strength (all "colour squares" are set to 50% black and are unselectable).

The way to vary the amount of transparent effect you wish to apply is to adjust the strength of the individual tools that you use. After a second of getting used to this, it becomes obvious. At this stage it must also be reported that the transparency effect did not function properly on early upgrade batches – a problem that *Spacetech* are aware of and probably solved by the time you read this. The problem came when transparency was selected from the mode when any other colour but 100% black had been selected prior.

Photodesk also has a good clear way of representing a masked area if there is no visible layer behind the one you are currently editing. This is shown in Figure VI with the cheque effect, which also demonstrated the ability to display varying levels of transparency, in this case by applying it with an airbrush thereby getting soft edges.

Applying the theory

It's all very well stating that the layer addition is feature-rich in its area, but it also has to be usable. This is what distinguishes *Photodesk* from its PC/Mac counterparts. The basic principle that every applying tool (such as a paint or airbrush, drawing tools and magic wand) can work with any combination of effect tools (such a colour, texture etc.) stays with the latest version of this application and remains its strongest card. The best thing is that the layers facility doesn't interfere with this perfectly balanced user interface.

There are many ways to edit layers, but perhaps the best way, depending on the application, is to treat it as a separate image. This can be done by either turning

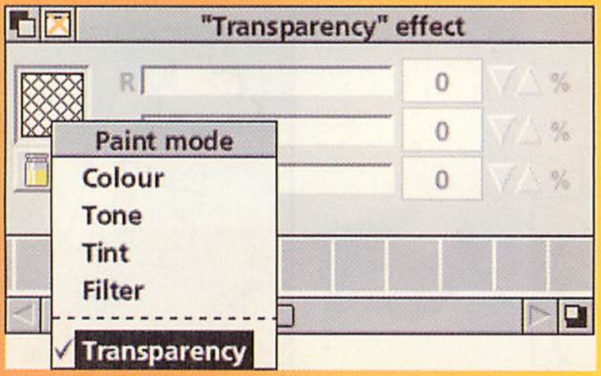


Figure V: The new colour

off the other layer's visual presence or by dragging a layer from the layer control window (Figure IV) to the clipboard and then back upon completion. If you intend to use the layer facility with a low amount of RAM available then it might be best to create each layer as separately and combine them towards the end.

As a matter of course, I found myself creating from scratch what is probably the largest bitmap image I have ever attempted using *Photodesk 3*. The result, gracing the front cover of this magazine and now also being confirmed as the *Photodesk* icon image to replace the existing circular one started out life as a simple piece of linework created in *ArtWorks* (or equally easily done in *Draw*) – as shown in Figure VII.

Upon dropping this vector outline into the newly created "tracing layer" of a *Photodesk* file at the correct resolution I came across two severe problems. The first and most important was that at the scale chosen (over 4000 pixels square), the *Draw* file rendering completely corrupted the image. After identical repeated situations, I resorted to rendering it as an *ArtWorks* file which went perfectly, but *very* slowly with anti-aliasing switched on, even considering the amount of pixels being placed. After all the effort, I found that it was best to switch the anti-aliasing off when attempting to trace objects and to ensure that all lines were rendered at two pixels wide.

Once laid down I would then flood fill an area using the magic wand in mask mode, invert the mask and use the very same mask on the drawing layer above. By shrinking or growing the mask by one pixel, the mask area would then match the centreline of the boundary of the original two-pixel-wide outline. Therefore when the area next the that one was done in the same manner, the edges would meet perfectly.

The reason for doing this in two layers was so I could easily rectify a mistake at a later stage by using the original outlines as pure templates and so no residue to the original outlines would remain on the final image, creating a purer image.

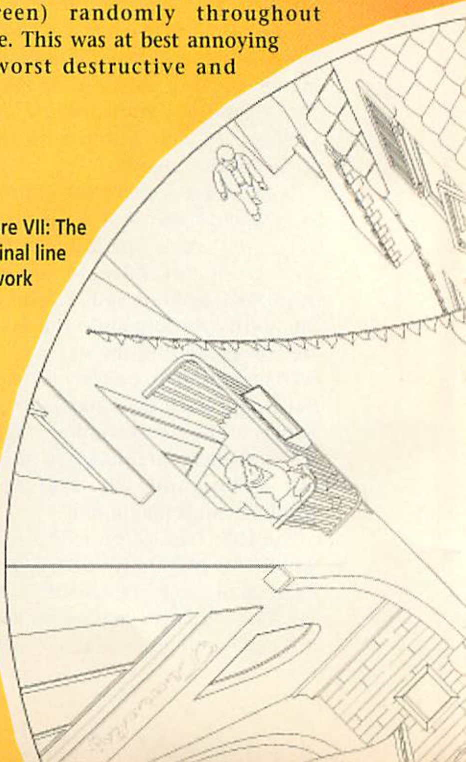
Figure VIII shows the process described above, where the 50% red covering is



Figure VI: Representing invisible masks

the mask in the rendering layer, leaving a perfectly sized gap to airbrush an individual roof tile to the colour I desired. All this leaves the original trace layer intact.

In order to render the complete image, this exact method was copied many times for each component of the drawing which was subsequently airbrushed in with the aid of a Wacom tablet (which is superb used in conjunction with the *Photodesk* range). In the process of completing the image I did notice that curious single pixels would change into very vibrant colour ones (usually lime green) randomly throughout the image. This was at best annoying and at worst destructive and


Figure VII: The original line artwork





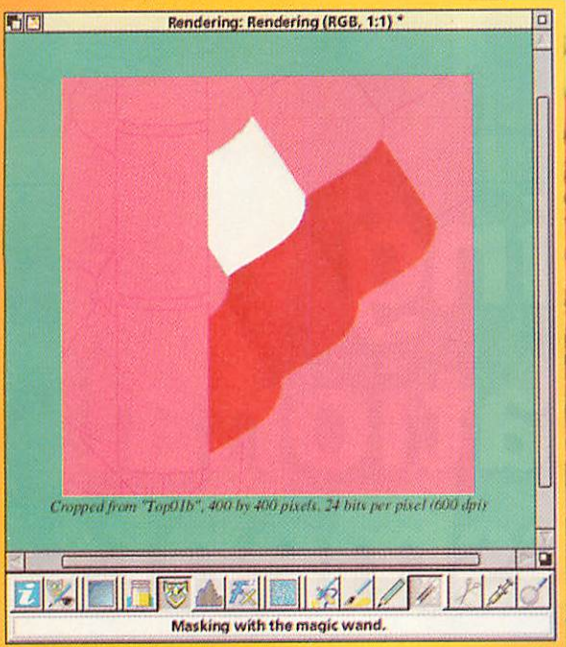


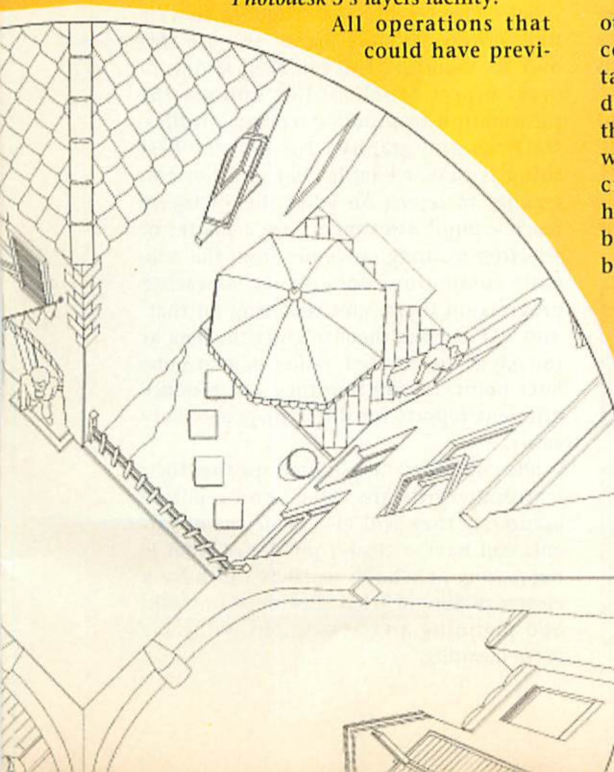
Figure VIII: Using two layers and mask

should not take place. My suspicions were aimed towards the virtual memory system which did a lot of disc rattling due to the low memory level in the machine used, but nonetheless occurred frequently.

To conclude

I have blasted through what is a very deep subject and one that *Photodesk* has managed to give the appearance of being child's play. My singular example of what to do with layers is completely insufficient and does not even touch such uses as montages, creation of landscapes (as shown in the brief additional manual) or the like. What this really indicates is that it is *your* imagination that is the limiting factor when it comes to using *Photodesk 3's* layers facility.

All operations that could have previously only been done by Clares' *Composition* under RISC OS have been hijacked by *Photodesk 3*, but with a much greater ease of use and control. Not to mention the standard and optional extra toys (sold as "Effects Plug-ins") and the ability to use CMYK separated sprites.



There are still bugs – some minor, others not so. However, it gives me great confidence to see that the developers take note and act promptly upon any declared faults. For this reason, I use this package in a commercial environment with confidence. It has never terminally crashed on me, and where the image has been slightly corrupted, the undo buffer usually pulls me back from the brink.

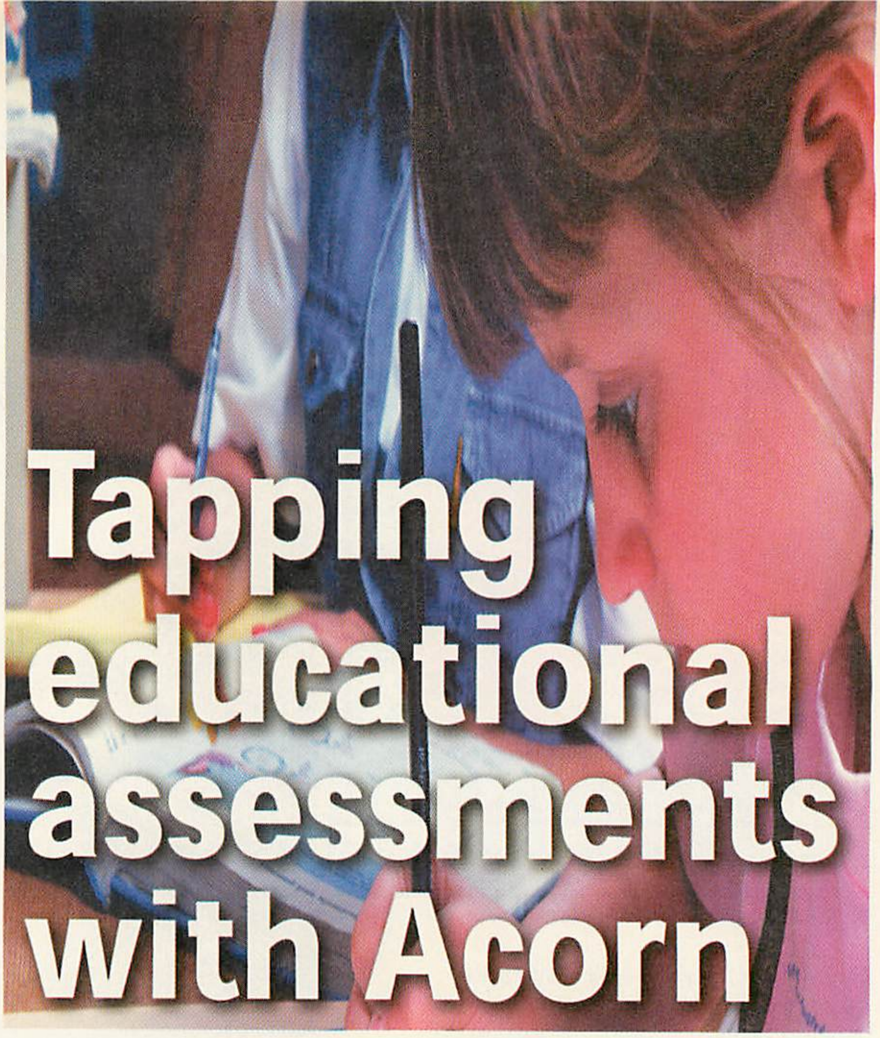
Perhaps the greatest letdown after an amazing display of software capability is that of the upgrade manual. Currently only supplied as a HTML-based on-line one (along with a PD browser), it is too brief and does not do the complete overhaul any justice. Thankfully, the package is so easy to get to grips with, including all the layer aspects, that the issue is reduced slightly, but by no means totally. This situation may change shortly and doesn't affect the professional printed manual that was supplied with version 2 and therefore coverage of the vast majority of the features.

To end it, I must state that by the single addition of layers, the use and versatility of *Photodesk* has increased by at least two-fold without detracting from any of it well-established advantages. Is it worth almost £300? Well, if you are serious about design and publishing, then a resounding "Yes!". AU

Product details

Product:	Photodesk 3
Supplier:	Spacetech Limited, The Courtyard, Southwell Business Park, Portland, Dorset, DT5 2JS
Price:	£299.50 (please contact Spacetech for the latest upgrade path discounts)
Tel:	01305 822753
Fax:	01305 860483
E-mail:	sales@spacetech.co.uk
WWW:	http://www.spacetech.co.uk/

ESD



Tapping educational assessments with Acorn

Nobilangelo Ceramalus visits a new Kiwi company launching a superb school resource with web connections

Educational Software and Devices (ESD) rose like a supercharged phoenix from the ashes and jetsam of Acorn New Zealand and its distribution substitute, Samcor Computing, and has launched an innovative, web-accessible pupil-assessment package that has been received enthusiastically by local schools and it recently attracted notice with a front-page story in Computerworld New Zealand for its innovative NC installations in schools no mean feat considering that Computerworld reports on mainstream computing and ESD has a solid Acorn foundation.

The company's expertise and performance has now been crystallized with the launch of TAP (Teaching Assessment and Planning), its magnum opus, a package so customisable that the only succinct description is in its name.

Always on tap

TAP is a suite of programs powered by a multitasking, multi-user relational database (RDB) – allowing more than one program in the suite to access the database simultaneously in the same machine, or many users can access it simultaneously from different machines. It is written in a mixture of ARM code, C++ and BASIC and requires a Risc PC or an A7000+ with 4MB of RAM. Datapower is desirable for analysis, graphs and so on because, although TAP has its own RDB engine, data can also be read by Datapower.

The system has two main parts plus some adjuncts and utilities: the Tank, !TAP, !Plumber, !WebTAP, and !Skills. The Tank is a purpose-built relational database, containing all the data and the configurations.

!TAP is the main program, through which data is entered, edited, viewed, and analysed. !Plumber, as the name suggests, installs the Tank and TAP. You can start with basic data, then add user-defined fields ad infinitum – disc space permitting.

It exists to create reports, ranging from online information for principals to the automation of school reports. As Lewis says: "TAP allows *teachers,* not just school administrators, to enter information about their pupils on the classroom computer or on the Internet." In this way TAP is very different from similar software, such as Wintel's Musak, which is designed to have data entered by staff in the school office, while TAP's Net connection widens both input and output opportunities to the maximum.

Being web-based it is not restricted to Acorn networks, via an Acorn server, typically a Risc PC, it can be accessed across a Wintel/Mac network. And because it is web-based, TAP is not the only way of accessing the data in the Tank. If the optional *WebTAP* is added to the basic suite, the data (suitably passworded and encrypted) can be shared across the web. Password levels control who can access what levels of data allowing teacher marking and assessments at home or school.

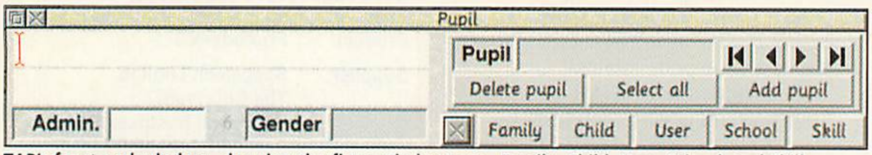
WebTAP supplies dynamic chunks of HTML, BASIC programs running on the TAP server assemble the requested data in HTML format on the fly and fire it down the line to the user or any platform that can handle HTML data.

At the chalkface

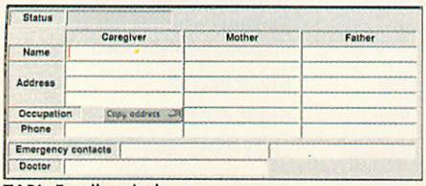
"The heart of TAP is so cross-platform that the platform is not an issue," France says. Another of TAP's strengths, is that "The program is designed to fit in with the way the school does its assessments," adds Lewis. "It is not a case of modifying the way you do things to fit the program. You modify the program to fit your school." Which means it could be configured easily to the UK situation.

Sally Rice teaches at a school in Hawkes Bay where it has been in use for over six months: "TAP can keep records of every aspect of school life, and use the information to produce reports, profiles, statistics and graphs." For her, the best thing is that it enables her and her colleagues to report on what they actually teach – pupil assessments are a matter of selecting learning outcomes from the relevant curriculum documents, assessing progress on them, and reporting on that. And TAP enables them to enter the data as the pupils are assessed, rather than at some later point. In addition they can produce different reports for different people very easily.

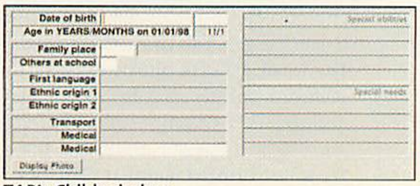
She continues, "If children see that their learning efforts are valued and reported accurately they will also value them; parents can have a clearer picture of what is happening at school; teachers can have a clearer picture of what they need to teach; and planning and assessment will have more meaning."



TAP's front-end window, showing the five main buttons – Family, Child, User, School, and Skill



TAP's Family window



TAP's Child window

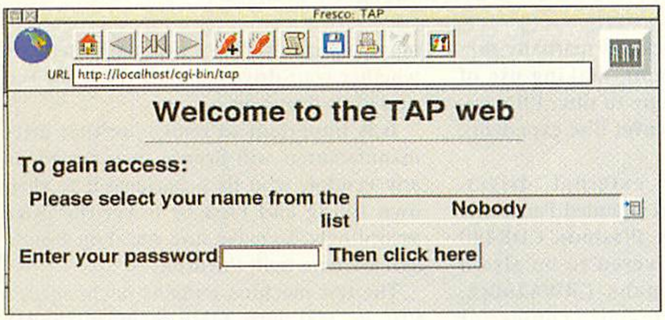
Kiwi NCs

Educational Software and Devices (ESD) see NCs as a major force in education. ESD's technical and support manager, Ainsley Lewis, one of those unassuming brains who forms intimate friendships with bits, bytes and electrons, expresses very simply what he and his colleagues are doing: 'NCs were not designed to be used as desktop machines They were designed as web-browsers. We are using them as desktop machines.'

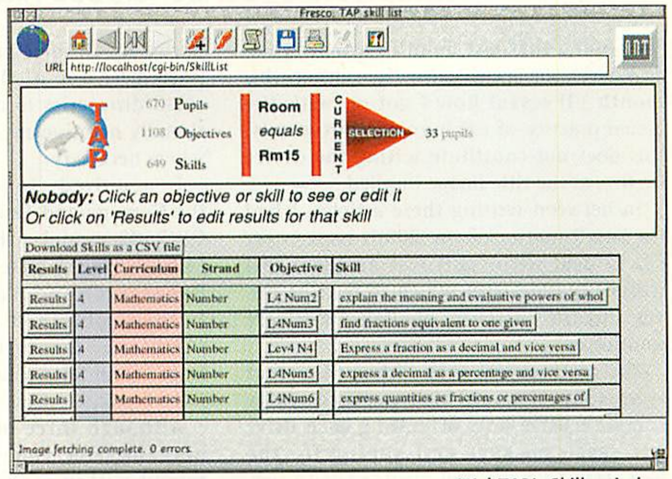
NCs in education are not the same as NCs in business – a different approach and skills are needed. ESD's first NC network was installed earlier this year was at Clover Park Middle School, Auckland, which has six machines running off a Risc PC server, although, as ESD points out, the server could be anything. Clover Park also has a router, so all machines have direct access to the Internet on power-up. The combination of Lewis's and Hayes's technical and support skills had the new networks up and running in just a few hours.

Other schools, seeing a chance to make significant increases in their desktop populations without breaking their budgets, are starting to queue at ESD's door. James Hargest High School in Invercargill, in New Zealand's far south was ESD's second installation and bought 15 NCs. Pasadena Intermediate is to add a clutch to its network in next year's budget. Its deputy principal, Maurice Hendrix, says ESD makes NCs look to the user exactly like a Risc PC, so in effect they get fully-blown Risc PCs for about half the price of an entry-level machine.

But users get more than RISC OS on their screens. They also get the web, and, via Citrix, Wince3.11, with Wince95 on the way. ESD's third installation, at Auckland Normal Intermediate, which added 12 NCs recently, was the first to pipe both RISC OS and Wince3.11 through them. "The NC is crucial," says France emphatically. "It is where we are heading. Half of our business by the end of the year will be NCs."



WebTAP's entry window



WebTAP's Skills window

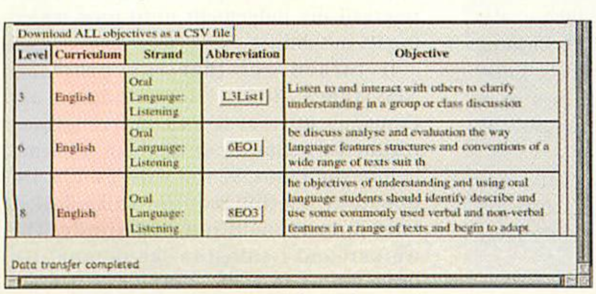
Nuts and bolts

TAP's initial screen above leads to the Family, Child, User, School, and Skills screens. Most are self-explanatory, with the possible exceptions of User and Skills. The User screen gives schools a place to define and enter whatever assessment data they please – extracurricular interests, for example, or private hobbies.

The Skills screen gives a box where all curriculum objectives can be located. Menus associated with the various parts of the screens simplify and speed the entry of data, so that much of it can be entered with a few mouse clicks by selecting from preset lists, so ensuring a high degree of accuracy.

Pasadena Intermediate, in Auckland is another TAP user. Deputy Principal, Maurice Hendrix uses it to collect all the school's assessment data while Datapower 2 sorts, sifts, and analyses. For him TAP puts information at his fingertips, enabling analysis of performance not just pupil by pupil but across the school or any chosen group.

For example, a new mathematics programme can be evaluated, via its effect on pupils' maths assessments, not only to see if it succeeded or failed, but why. It may, for instance, be failing one ethnic group, or an age-band. Trends can be seen easily, both in individuals or groups, by graphing assessments against time: "It is a tool to that will help us diagnose our weaknesses and assess our teaching programmes."



A detailed Objectives list selected from the window

HTML provision

Ann Milne, the principal of Clover Park Middle School liked the customisation and performance but most of all wanted her teachers to be able to tap in from home which allows data to be entered progressively through the year instead of in one big rush at the end.

Clover Park is putting reports to parents on to TAP in groups of classes. By the end of the year the whole school will have been switched over, the different levels of passwords protection allowing for privacy.

From small acorns

The product was officially launched in late May, although an early form of the development version went into several pilot schools two years ago. Input from the pilots played a big role in shaping the final package.

ESD sees TAP as a flagship product and believes there is a global market for it, but because the package requires good support it is moving offshore cautiously. It is not yet selling it outside New Zealand, but it does want to appoint companies in the UK and elsewhere who want to be national distributors and are capable of giving schools the proper level of support. Watch this space. AU

Product details

Product:	TAP
Price:	TAP is sold in New Zealand in two forms: without WebTAP and with. Without (just TAP and Tank and their support programs) it is $NZ600. With it it's $1200. To translate into sterling divide by 3, but ESD says that when prices are set in other countries they will reflect the cost of local support. That gives you a site licence that covers your whole school or institution.
Supplier:	ESD
E-mail:	esd@kaon.co.nz

Burn it up...

Stephen Scott concludes his review of CD writing systems

Hoping that last month's article whetted your appetite for the subject, this month I'll reveal how I got on with the actual practice of CD burning. Fortunately, this does not constitute setting the device on fire, as the title image implied.

In between writing these articles, I had the small matter of the 200th issue cover CD to deal with. This was an ideal real world situation with which to test the drives and the currently available software solutions.

The problem was that with such a short time span, I could not perform fully comprehensive tests of putting each drive with each package and hoping for the best. What I have done instead is to perform a smaller comprehensive test using simulated writes. This is a feature supported by all three packages (partially supported by one of them), making use of small directories to copy to disc. I'll occasionally mention my cover disc experience where necessary.

I acquired four external drives, the Cumana and Eesox branded Panasonic CW7502 models, the Plasmon CDR480 (which I have discovered to be also a Panasonic) and Yamaha CRW4260tx. I then obtained review copies of *!CDBlaze* from Cumana, *!CDBurn* from Warm Silence Software and *!CDScribe* from Eesox.

Although three of the four drives are now the same model, the firmware contained within each model may contain subtle differences which can deceive the software on test. To complicate matters, manufacturers will not necessarily tell you whether your drive contains the latest version of its firmware.

It is important to remember that drive manufacturers will licence their designs to any vendor, who then package it to their own liking and raise or lower the price accordingly. So make sure you shop around and ask who built the drive.

The test machine remains unchanged, a Risc PC 600 with 34Mb memory, 200Mb drive, and Morley/AlSystems *PowerROM* upgraded SCSI card, but my testing method has changed from producing two tracks to performing simulated multisession disc mastering, using various data files from the hard disc.

The idea behind performing simulated writes is to save time and not waste discs unnecessarily. The drive will light up during the process, but the disc inside will not be harmed. This is useful for determining whether the correct write speed has been selected.

If the speed is too high for the data transfer rate you will suffer from *buffer underrun*, which is when too little data is being received for the burn procedure. When this happens on a real write, the disc is permanently damaged. So a simulation is recommended to check for any unforseen mishaps.

CDBlaze

To recap, Cumana's offering is the most recent of the three packages, standing at version 1.08 at the time of writing. You may well have tried the 30 day version supplied on the cover CD last month. The interface consists of one desktop window containing tabbed windows, where clicking on such a tab brings forth the window it is joined to. Whether it is a fault of RISC OS or not, the redraw time for these windows is very slow.

One other irritation is how the current configuration is always saved upon closing the window. When another drive is connected, attempting to reopen *!CDBlaze* produces a wait of some ten seconds while it tries to find that previous drive. When the window finally appears, the program crashes when you wish to activate the new writer. For most people who will probably possess only one drive, this wont be a problem, but it does highlight somewhat sloppy programming.

Yet another problem is how the window position is fixed in favour of higher resolution screen displays. My default resolution is 800x600, but the main *!CDBlaze* window decided to open in the top right of the screen, without the title bar to move it to the correct position. A quick change of mode to 1024x768 remedied the problem.

With regards to actual test writing *!CDBlaze* performs extremely well. No incompatabilities between the drives were apparent when building both the image and performing the burn. I even used the write on the fly feature which removes the need to build the image first and wasting hard disc space, and this worked. The whole process is shown in a small window containing a progress bar, and an estimated time to finishing the disc.

From my extensive use of *!CDBlaze*, its initially slick, nice looking interface hides some bugs and instabilities. With further development of both the software and the manual, *!CDBlaze* will grow into a product more worthy of its currently large price tag.

CDScribe

You may remember from last month that *!CDScribe* (current version 2.11), and its accompanying soft-loadable SCSI 2 driver appeared to detest my SCSI card, so I reserved my judgement until now regarding its suitability.

It turned out that two programs, AlSystem's SCSI Filer module, and Cumana's internal IDE CD driver software required deletion from the boot sequence, before the Eesox SCSI 2 driver and CDFS update (CDScribe requires CDFS 2.21 or later to run) could run successfully. This workaround resulted in the internal IDE drive failing to work, meaning that direct



disc copying would be impossible.

I was able to fathom this through a mixture of luck and perusal of the very hastily written manual. From all of this, CDScribe has been by far the most difficult of the three products to install. I think it is imperative for Eesox to improve their documentation, otherwise the only object that will be burned is their manual.

After installing the soft-loadable SCSI 2 driver, and running *!CDScribe,* I was able to perform a test write, using an image built with the supplied copy of *!ISOForm* 1.11. No unexpected errors were reported during the actual writing. But on one occasion, the machine hung up for no apparent reason when I pressed Menu on the main write window, forcing me to do a hard reset — but I couldn't duplicate it.

With the soft-loadable SCSI driver installed, *!CDScribe* was able to cope with all the external drives. Obviously, *!CDScribe* works with the Eesox drive, bearing in mind the fact that two other drives are effectively the same, bar possible differences in firmware.

Once you get the knack of using *!ISOForm* and *!CDScribe*, burning discs does become much easier. But the initial learning curve is not helped by the quality of the manuals.

CDBurn

Warm Silence Software's solution has been in development since 1996. In practice, I could not actually get the supplied *!CDFaker* utility to work on my computer, even after dragging an ISO image file to it, as per the supplied instructions. This may be down to how I used or installed it, but it wasn't a problem, for the checking procedure within *!CDBurn*, which *!CDFaker* probably would have done, is perfectly adequate for making sure content is functional before any burn is made permanent.

I stated last month that *!CDBurn* is a nicer experience in use and appearance, and my opinion still holds true. Every window is laid out well and brief in their content. The Control Center window contains six icons, each one covering very specific aspects of writing. Audio CD creation is kept to one window, while the more complex aspect of data CD creation is spread between three windows — Filer-like layout, Directory layout and write CD.

The first two concern the preparation, and are practically the same in function. The only difference is that the former window allows you to drag files and folders from any source, into a special ISOFiler window, while the latter allows only a given directory to be dragged into it. In both cases though, *!CDBurn* automatically converts the filenames to the desired ISO standard, whether it be normal ISO, ISO with added Acorn CDFS extensions, or *Joliet*-style long filenames, which CDFS will truncate as standard, but be shown in full on other platforms.

The writing process displays two windows. One to show progress with the burn, the other to check the validity of the data. Items such as wrongly datestamped files are spat out by the ISO standard, and the latter window will display this and any other irregularities. If such things happen, you are asked if you want to go ahead and write the disc anyway. It is better, however, to remove all problems before finishing the disc to ensure maximum portability.

Erratum

Last month's price for the Plasmon drive was incorrect. The correct price should be £359.00 ex VAT (£421.82 inc VAT).

Multisessioning

Multisessioning is a well-trumpeted feature of both *!CDBurn* and *!CDBlaze.* The former has only just introduced it, while Cumana's solution has offered it from day one. This feature lengthens the life of a CD-R, as you can add more and more data to them at any time, until it is filled to capacity. Make sure discs are closed when you are sure they do not need any more data added to them, because some CD drives will object to unfinished discs.

!CDScribe does offer a multisessioning feature, but only for audio tracks. Data tracks are not supported because of ISOForm's inability to create the right track information for such a procedure.

Conclusion

When it comes to the crunch, all the software performs well at the actual burning stage. My fears concerning firmware differences in the three Panasonic drives were unfounded. In installation and data preparation however, there is varying quality.

I found *!CDScribe* to be the most infuriating of the three to install. But once you overcome this hurdle, it performs very well. Its reliance on the ageing *!ISOForm* software is a hindrance, however, and the manual quality really needs to be addressed properly.

!CDScribe is not available on its own, only as part of a bundle. When it comes to buying bundles, there is a choice of whether to support the Acorn market and pay more, or whether to purchase a stand-alone drive with PC software, and the Acorn software separately. To give a clearer ➤



idea of price comparison, see the accompanying chart. Eesox are unique in also offering a complete solution, including a SCSI card. But for fairness, I have not included it in the chart, as it is the most expensive solution of all.

The Eesox drive-only bundle is the cheapest of the two Acorn-specific bundles. If you find *!CDScribe* not much fun to install, you can purchase one of the other two products, although this raises expenditure to a higher level than the other solution, the Cumana bundle.

In terms of software, if you want proper multisessioning capability and extra attributes, then it is a choice between *!CDBurn* and *!CDBlaze*. The latter offers extensive features and a potentially great front-end, yet its instability affects my confidence in the end product. My use in attempting to master the cover disc merely resulted in fatal errors and with it, wasted discs.

In its present state of affairs, the price tag of *!CDBlaze* alone is very excessive. The manual I received with the software was an early edition with mistakes and omissions. I know for sure that the manual will be improved, but whether the software itself will be tested and developed further is another matter. I would therefore opt for *!CDBurn*. I preferred using this program to the others, no matter what drive was installed. It does the job, and it does it very well indeed. It was my program of choice in producing the cover CD, although the Cumana drive was used to do the burn, as it happened to be connected at the time.

If you look at the drives alone, the performance of all the supplied models was agreeable. All the drives emit a small to medium level of noise quite similar to the internal IDE hard drive on the Risc PC. However, the Plasmon drive may be annoying to users in the way that the power supply unit is external, as opposed to internal, like the other products. This means having to have a little extra space for the unit. Its recommended price tag is also very excessive as it stands, but you can probably obtain it for a cheaper price at any good PC dealer.

To save money, and buy any Acorn CD writing software with it, then I would recommend the Yamaha bundle and *!CDBurn*. The figure elsewhere on this page shows the price comparisons of all the products, and the Yamaha drive wins substantially in price terms. Considering that the quoted price is direct from the manufacturer, you could save even more money by going to a reputable PC dealer.

My conclusions were based upon the available options during August and September, when this article was written, so check with manufacturers and developers for any recent developments, especially with Christmas drawing near. The market is changing fast with the introduction of DVD, and the *Acorn User* website will soon be keeping you up to date with the latest developments, as well as further information on the subject of CD writing.

But in conclusion, the Yamaha CRW4260tx bundle and Warm Silence Software's *!CDBurn* offer the best value for money, stability and usability. Having completed this roundup, next month I shall talk more about how I created this year's cover CD. AU

Product details

Drive prices shown are for external SCSI only. The Plasmon and Yamaha prices are direct from the manufacturer.

Product:	!CDBurn
Price:	£49.00 ex VAT (£57.57 inc VAT)
Supplier:	Warm Silence Software, PO Box 28, Woodstock, Oxon, OX20 1XX
Tel:	0585 487642
E-mail:	info@wss.co.uk
WWW:	http://www.wss.co.uk/

Product:	!CDBlaze
Price:	£79.99 ex VAT (£93.99 inc VAT)
Supplier:	Cumana, Whitegate, Dunmow Road, Hatfield Heath, Bishop's Stortford, Hertfordshire, CM22 7ED
Tel:	01279 730800
E-mail:	sales@cumana.co.uk
WWW:	http://www.cumana.demon. co.uk/ (30 day version available for download, and on last month's cover CD)

Product:	Cumana 4x8x CD-R drive (4x write, 8x read)
Price:	£399.00 ex VAT (£468.82 inc VAT) (price includes !CDBlaze software, SCSI 2 cable, 2 CD-Rs, but no PC software)

Product:	Eesox 4x8x CD-R drive (4x write, 8x read)
Price:	£379.00 ex VAT (£445.32 inc VAT) (price includes !CDScribe software, SCSI 2 cable, but no PC software)

Product:	Eesox CD-Recorder Kit (includes Eesox SCSI card and software, 4x8x CD writer and !CDScribe software)
Price:	£449.00 ex VAT (£539.33 inc VAT and carriage)
Supplier:	Eesox, Century House, 1st Floor, Market Street, Swavesey, Cambridge, CB4 5QG
Tel:	01954 208208
E-mail:	sales@eesox.demon.co.uk
WWW:	http://www.eesox.demon.co.uk

Product:	Plasmon CDR480 (4x write, 8x read)
Price:	£359.00 ex VAT (£421.82 inc VAT) (Price includes PC only software, and 1 CD-R disc)
Supplier:	Plasmon (available from local dealers)
Tel:	01763 262963
E-mail:	sales@plasmon.co.uk
WWW:	http://www.plasmon.co.uk

Product:	Yamaha CRW4260tx Value Pack (6x read, 4x write, 2x rewrite)
Price:	£283.00 ex VAT (£332.52 inc VAT) (Price includes PC only software, CD-R and CD-RW discs)
Supplier:	Yamaha (available from local dealers)
Tel:	01908 366700
E-mail:	sales@yamaha.co.uk
WWW:	http://www.yamaha.co.uk

6 reasons why ArgoNet are the best:-

1st Get Online Pack

This special offer gets you online for the first THREE MONTHS to ArgoNet for only £24.95 including access software, if required, for Windows, Acorn or Mac.

2nd Get Connected Pack

An award-winning pack containing external 33.6K voice/fax/data modem and access software for Windows, Acorn or Mac. With THREE MONTHS online to ArgoNet the complete pack is only £79.95.

3rd Surf at Speed Pack

Complete with external 56K voice/fax/data modem, access software for Windows, Acorn or Mac, stereo headset and THREE MONTHS online to ArgoNet. Only £109.95.

4th SuperSurfer Pack

Contains everything needed - 128K external ISDN terminal adaptor, access software for Windows, Acorn or Mac and THREE MONTHS online to ArgoNet for only £199.95.

5th Modem Trade-in Deal

ArgoNet accept any modem, working or not, in part exchange for a new external 56K voice/fax/data modem. The K56flex modem with stereo headset and lifetime guarantee is £99.95 without a trade-in or with a trade-in is only £79.95.

6th ArgoSphere for Children

ArgoSphere is ArgoNet's award-winning Web site designed for children aged 3 and older to use offline. This safe site, containing a wealth of educational activities for home and school use, can be explored FREE at www.argosphere.net.

for the 7th call free phone:

0500 585 586

for friendly help, information and to order

ArgoNet Internet Services

ArgoNet's Premier Service for home and business users includes 10Mb Web space and 5 e-mail addresses. For schools, the Education Online Service includes a free school domain, unlimited Web space for your school's use and unlimited e-mail addresses.

A subscription to ArgoNet includes full use of ArgoSphere the award-winning Web site for children, unlimited access with 100% local call coverage and free phone support. Subscriptions for dial-up modem or ISDN access are available monthly, 6-monthly or annually from only £10 (exc. VAT) per month.

winners of a BETT'98 INTERNET AWARD & PC Guide 1997 Award for THE BEST MODEM of THE YEAR

ARGO net
THE INTERNET EXPERTS

Argo Interactive Group plc,
FREEPOST PT795, Chichester, PO19 2YZ
e-mail: info@argonet.co.uk web: www.argonet.co.uk

Prices include VAT, UK carriage & packing, unless stated otherwise. E&OE

A Pocket Book

When Mark Moxon went off to explore the depths of Asia, he decided to keep in touch using his faithful Pocket Book II

In this day and age of cheap mobile phones and local-call Internet access, we automatically assume that when we talk about 'Global Internet Communication', it really is 'global'. But for the majority of the world's population, Internet access isn't just financially impossible, it's the stuff of which myths are made: to your average Indian or Polynesian, computers aren't real, they're something that rich people sometimes talk about. You can't eat a computer, you can't pray to a computer and a computer can't give you children, so what possible use can one be?

Indian Railways, the world's largest employer, has only recently introduced computer technology into its ticket offices: now, if India's estimated 1,030 million inhabitants want to book a berth on the Delhi-Calcutta sleeper, they can do so by computer – the hour-long wait in a raggedy queue notwithstanding. But even in Bangalore, the technology centre of India, Internet cafés are relatively rare and, if you manage to track one down, the on-line wait to check your e-mail can be prohibitive, not to mention expensive, with an hour on the Internet costing about the same as a night in a hotel or a three-course meal. So what do you do if you want to stay in contact from the depths of the Third World without breaking your budget?

The answer, perhaps surprisingly, is the good old Pocket Book II. I looked at plenty of other solutions from Windows CE to the Psion Series 5 to full laptops, and for what I wanted to do – to send and receive e-mails, be able to write articles and books, and to plan my journey – the Pocket Book was not only the cheapest solution, but also the best one.

Old faithful

It's still an impressive concept: for 500g of weight and less bulk than two medium-sized paperbacks I ran a freelance writing career from the far reaches of the world, and did so for three years of constant travelling. My system consisted of a 1Mb Pocket Book II – into which I plugged a 512K RAM SSD to extend the memory, and a couple of 256K Flash SSDs to provide a backup medium that I could store separately from the computer itself – a Psion 3Fax modem, a TeleFast acoustic coupler from TeleAdapt, and a Compuserve account. If I left on the same trip now I would consider changing that to a Psion 3c (the backlight could be useful every now and then), a Psion Travel Modem (which only works on the 3c, not the Pocket Book II), PsiMail Internet software and a TeleFast Plus acoustic coupler.

For an Internet service provider (ISP) I'd stick to Compuserve. I wouldn't normally recommend Compuserve to anyone with whom I wished to stay on friendly terms, but Compuserve is still the only truly global ISP, as it was three years ago. When I set off there were no Internet stacks available for the Pocket Book and the thought of hacking KA9Q to work wasn't exactly appealing, so Compuserve's textual interface was absolutely the only choice: I subscribed, received an e-mail address that looked like it had been spawned by ERNIE, and hit the trail.

When I wanted to access my e-mail, I would hook up my Psion 3Fax and acoustic coupler to the telephone and dial the nearest number from Compuserve's long list of global nodes. This is the real advantage of Compuserve: not the on-line information, not the Prisoner-esque e-mail address, but the number of foreign ISPs with whom Compuserve has an agreement. I successfully used Compuserve from Australia, New Zealand, Indonesia, Singapore, Malaysia,



Friendly Indians: these people were fascinated by my technology



Thailand and Nepal, and I would have been able to use it in India if Compuserve hadn't closed down its Bombay node a matter of months before I arrived.

The comms package, which incidentally is built into every Pocket Book II whether or not you have a modem, took care of the connection using a nifty little script I'd written during a particularly boring flight from London to Sydney – the scripting language is described fully in Psion's modem manuals. However, Psion now sells PsiMail Internet, a software package that enables you to access PPP and SLIP accounts, send and receive e-mail via POP3 and SMTP, and attach files using MIME or UUencoding, which basically means you can use Compuserve without resorting to that ancient text-menu system; and on top of that you can, if you so wish, even surf the web.



Pocket Book, modem and acoustic coupler

Slow, slow, quick, quick, slow

Psion Series 5 users will, of course, be surprised that I would rather take a Pocket Book on the road than the all-singing, all-dancing, ARM-powered alternative. Well, assuming you're not the sort of expense-account businessman who is happy to drink the whisky from a hotel mini-bar without re-filling the bottle with cold tea, you won't be gallivanting around the world with a digital GSM phone attached to your laptop, so you'll be stuck with terrestrial phones. And if you're staying in hotels that would dearly love to get one star let alone five, you'll have no choice but to use an acoustic coupler because the telephone is bound to be hard-wired into the wall.

The TeleFast acoustic coupler, one of the best acoustic couplers available for a reasonable price, can cope with speeds of up to 24,000 baud on good quality domestic telephones, but in the middle of the Third World you can count yourself lucky if you find a telephone that's got a dial tone. Even on Western public telephones you'll be hard-pushed to get much more than 2400 baud, and in the Third World that's a definite maximum, so unless you can plug directly into the phone system, you're going to be restricted to textual e-mail only.

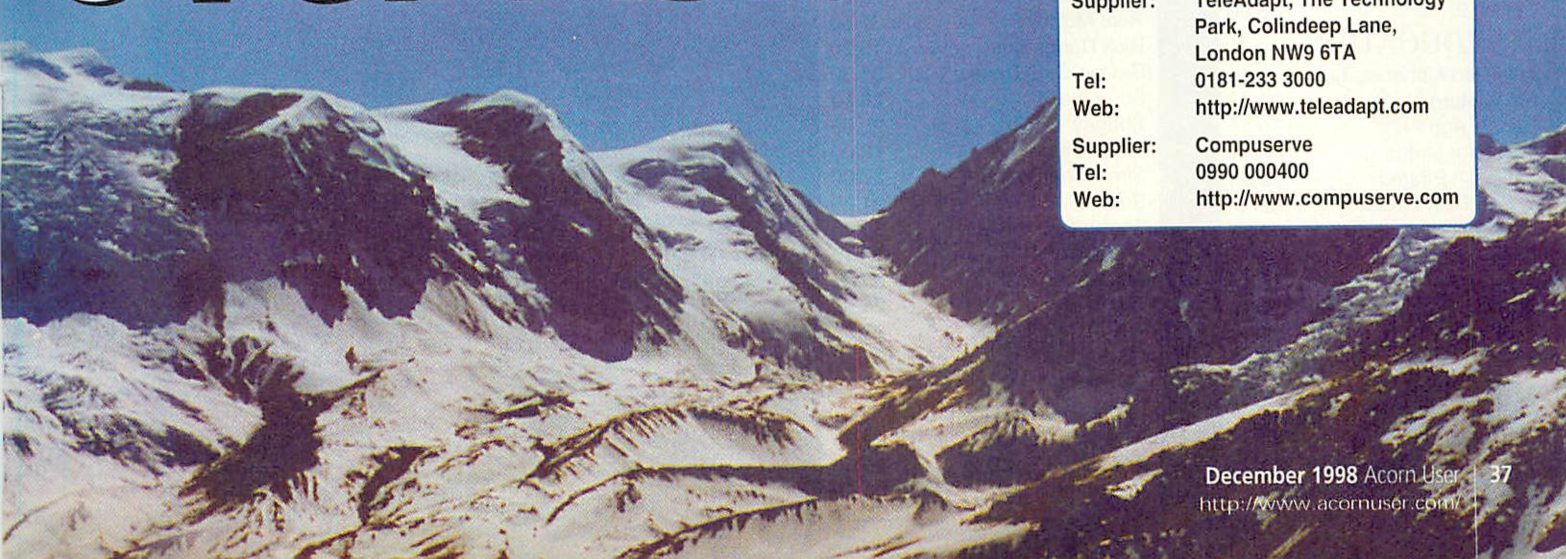
The result is that the speed advantages of more modern computers aren't much of a gain when it comes to being on-line; indeed, even if you are lucky enough to get a fast connection to an overseas Compuserve node, the chances are the modems on the other end can't go faster than 9600 baud, or 14,400 if the local deity is smiling on you.

Help is at hand, though. There are public domain programs available for the Pocket Book to compress files and UUencode them, and if you use PsiMail Internet it will cope automatically. And when you're struggling to connect in a steaming Bangkok public phone booth you'll appreciate that, when it comes to downloading large mails to your Pocket Book, size does matter.

Of course you can still use a Windows CE machine or a Psion Series 5 and simply run the communications side at a slow speed – there's no doubt that the extra features on a Series 5 would be useful on the road – but in all honesty one really rough trip on a rickety old bus through a tropical cyclone is going to prove very tough on the newer machines: the Pocket Book II is simply more robust and will survive almost anything but wear and tear. Not only that, it also has a longer battery life; is cheaper and therefore less of a concern for insurance purposes; it's a proven technology; simpler and therefore has less to go wrong; and finally it is more than capable of dealing with e-mail and limited surfing anyway.

And, of course, you can play Tetris while waiting for that delayed train, which is almost a good enough reason in itself to take a Pocket Book travelling. Just don't forget your protective leather case... AU

over Asia



Supplier details

Supplier:	Psion, 85 Frampton Street, London NW8 8NQ
Tel:	0990 134224
Web:	http://www.psion.com
Supplier:	TeleAdapt, The Technology Park, Colindeep Lane, London NW9 6TA
Tel:	0181-233 3000
Web:	http://www.teleadapt.com
Supplier:	Compuserve
Tel:	0990 000400
Web:	http://www.compuserve.com

The Acorn Software Network

Business and Utilities

Ant Internet Suite II	110.51
ArcFax	35.00
ArcFS2	29.37
ARCshare	49.95
Artworks	104.69
CD Burn	58.75
Complete Animator	94.05
DataPower 1	110.00
DataPower 2	166.32
DaVinci 90	81.08
Digital Symphony	56.95
Disc Doctor	28.45
Disc Rescue	45.00
Draw Works Designer	31.50
EasiWriter Professional	143.99
Easy C++	116.32
EasyFont Pro	59.95
Eureka 3	110.51
FastSpool+	17.62
Fireworkz Pro	166.31
Font Directory Pro	65.00
FontFX6	29.95
Game On! 2	15.00
Holy Bible (Illus.) BP(KJV)	82.25
HTML Edit 4	53.00
ImageFS 2	44.59
IMaster & TWAIN Driver	35.00
Impact Pro	139.53
Impression Publisher	136.41
Impression Style	83.54
MelIDI	129.00
MIDI Synthesizer	46.94
Midi Works	151.95
MovieFS	29.95
Ovation Pro	193.87
P'rllel port Zip driver (Argo)	34.08
PC Pro (+PC Exchange)	46.55
PC Sound Professional 2	40.00
Personal Accounts V4	49.00
Photo Link	65.55
Photo Real (Canon/Epson)	65.86
Photodesk 2	256.02
Photodesk plug-ins (call)	18.95
ProArtisan 24 (RPC Only)	89.95
Prophet 3	179.77
Rhapsody 4	94.95
Schema 2	121.50
Sibelius 6	110.00
Sibelius 7	665.00
Sleuth 3	151.57
SparkFS	25.00
StrongGuard	25.00
Studio Sound	113.95
Tablemate Designer	60.00
TechWriter Professional	222.12
TopModel 2	145.11
Turbodrivers (call)	54.69
WebSpider	40.00
WebTool for ANT Suite 2	29.38
WIMP Basic	44.99
Win95FS	41.12
XStitch 2	35.00

EDUCATION

Animated Alphabet, Talk	33.43
Arc Venture (various)	39.01
Aztecs, Age 7-11	50.17
Best Four Maths	46.41
Calabash Pirates	25.98
Crystal Rain Forest	50.17
DataSweet 3	69.33
Dazzle +	83.71
Dinosaurs	13.49
Doodle	32.37
English (10/10)	13.49
Essential Maths (10/10)	13.49
Essential Science	13.49
Expl with Flossy the Frog	28.79
First Logo	29.02
First Words with Smudge	25.98
Freddy Teddy's Adventure	23.50
French (10/10)	13.49
Fun School 3/4 (various)	24.99
Geography (10/10)	13.49
German (10/10)	13.49
Granny's Garden	28.79
James Pond Run. Water	27.00
Maths (Geometry) (10/10)	13.49
Maths (Number) (10/10)	13.49
Mega Maths	24.99
Micro Maths	24.99
My World 2 + 2	54.70
Naughty Stories Vols 1-6	44.65
New Teddy Bear's Picnic	36.78
Nursery Rhyme Time	33.43
Oxford Reading Tree 3	44.65
Pendown DTP	65.85
Playdays age 3-8	23.40
Playground (Freddy teddy)	23.50
Smudge the Spaniel	25.98
Spelling & Punctuation	13.49
Splosh+ (1-5 users)	51.70
Table Aliens	27.85
TinyDraw/TinyLogo	29.37
Tizzy's Toybox	47.94
Watch Magic Grandad	30.13

GAMES

Alone in the Dark	34.99
Anagram Genius	20.00
BHP Brutal Horse Power	28.49
Birds of War †	30.00
Black Angel	30.00
Break 147 & S'pool †	27.00
Carnage Inc.	22.50
Chocks Away Compend.	27.00
Cobalt Seed	23.74
Crystal Maze, age 7+	28.45
Cyber Chess	31.50
Darkwood	20.70
Demon's Lair	20.00
Drifter (DD/HD)	31.50
Dune II (CD - £31.50)	26.60
Dungeon †	27.00
E-Type 2 †	30.00
Eclipse Collection	22.49
Enter the Realm	25.00
Exodus	25.00
Fire and Ice	23.39
Formula Two Thousand	23.74
Global Effect	27.00
Groundhog	12.00
Haunted House	25.00
Holed Out Compendium	20.00
James Pond 2+	16.20
Krysalis Collection (NRPC)	29.99
Logic Mania	27.00
Pandora's Box	25.00
Patience Addict	19.95
Play It Again Sam 3	24.95
Play It Again Sam 4	35.00
Pushy (Shovy)	12.00
Real McCoy 2/3/4 (each)	35.00
Real McCoy 5	31.50
Rick Dangerous	15.26
Saloon Cars Deluxe	31.50
Scrabble	26.59
Shuggy	25.95
Silver Ball	12.00
Simon the Sorcerer	27.00
Small †	21.20
Spobbleoid Fantasy	30.00
Stereoworld	22.50
Stuntracer 2000 †	35.00
Tanks	25.95
The Time Machine	25.00
Virtual Golf	31.50
Wavelength	13.50

CD Business & Utils

Arm Club PD CD 1	19.00
Arm Club PD CD 2	15.00
Artworks	104.69
Artworks ClipArt 1 or 2	20.08
Bitfolio 7	42.74
Font Emporium	29.95
PDCD4 (Datafile)	15.00
PDCD5 (Datafile)	15.00
ProArtisan 2	98.93
Risc Disc Vol.1	15.00
Risc Disc Vol.2	20.00
Risc Disc Vol.3	25.00
Rob Duncan Cartoon Kit	42.74
Task Force Clip Art	33.20
Tekkie Disc (PRM's etc)	47.50

CDROM Education

Ancient Egyptians	42.30
Ancient Lands	50.53
Anim Talking Alphabet#	33.43
British Isles from the Air	42.30
Castles	42.30
Crystal Rain Forest 2	50.17
Dangerous Creatures	50.53
Dinosaurs	50.53
En Route	89.29
Era of the 2nd WW	81.08
Eureka Discoveries & Inve'	42.30
Garden Wildlife	42.30
Guardians of Greenwood	58.16
Hutchinson's Encyclopedia	52.82
Illustrated Shakespeare	29.32
John Cabot & Merchant V.	42.30
Kingfisher Micropedia	76.38
King Arthur	58.69
Kiyeko with Acorn reader	36.43
Map Detectives	50.17
Musical Instruments	50.53
My 1st Incrd. Amaz. Dict.	41.13
Number Time 2	28.99
Oxf. Talking Infant Atlas	22.32
PB Bears Birthday Party	41.13
Perspectives Francais	81.08
Rocks, Min's & Fossils	81.08
Romans	42.30
Science Explorer	66.96
Seashore Life	42.30
Science In Action	13.73
Settlements	81.08
Space Exploration	13.73
Survival: Mysteries of Nat.	42.30
The Way Things Work	50.53
The World's Weather	52.87
Tizzy's Toolbox	44.65
TOTS TV	19.95
Ultimate Human Body	50.00
Understanding the Body	42.30
Vikings	42.30
Water (Picture Resource)	13.73
World of Robert Burns	93.94
World Population Atlasfile	37.01

1500 titles Available!!

Some dealers may not stock some titles

Minimum delivery charge normally £ 2

Credit Cards and Official Orders welcome
E&OE
All Prices Include VAT @ 17.5%

CDROM GAMES

Abuse	25.00
Ankh	25.00
Crystal Maze	28.45
Doom Trilogy	35.00
Dune II	31.50
Simon the Sorcerer	32.40
Syndicate	29.00
Wizards Apprentice	24.95

New Software

DESCENT

The ultimate in 3D gaming, with complete 360° movement



£30

SuperSnail - £25
Morph - coming soon!

Key :

NRPC Not for RPC
† Separate RPC version available

Please note many titles have been abbreviated for the advert

Order from a participating dealer

Uniqueway
Tel 01222 464020 Fax 01222 440071
email sales@uniqueway.co.uk

Davyn Computer Services
Tel 01924 254800 Fax 01924 254036
email sales@davyn.demon.co.uk

CJE Micro's / NCS
Tel 01903 523666 Fax 01903 523679
email sales@cje.co.uk

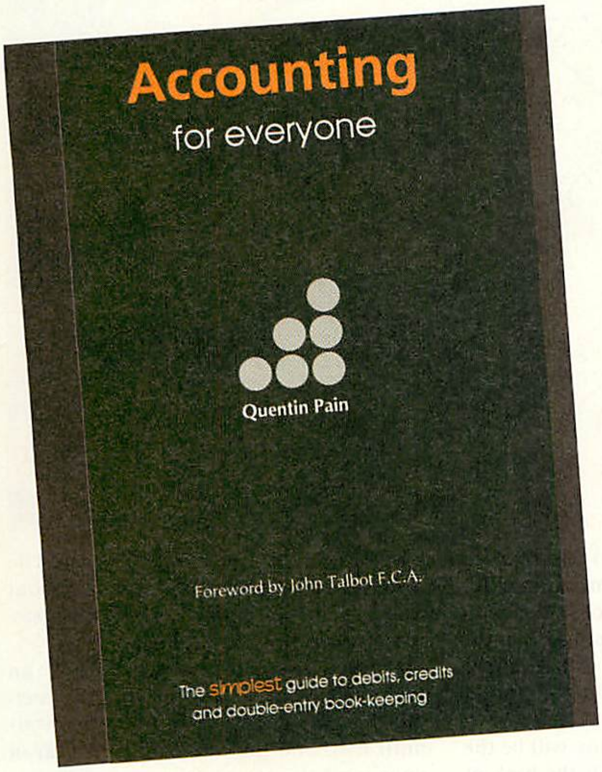
CTA Direct
Tel 01942 511000 Fax 01942 749325
email sales@cta.u-net.com

The Data Store
Tel 0181 460 8991 Fax 0181 313 0400
email sales@datstore.demon.co.uk

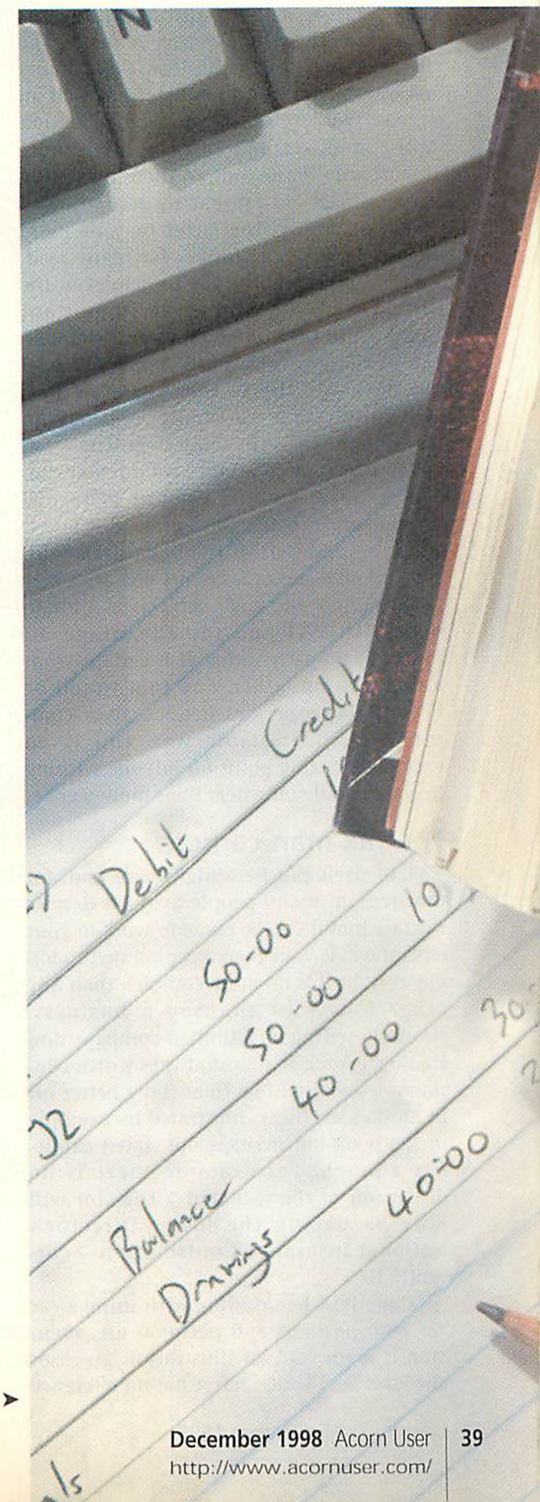
Liquid Silicon
Tel 01592 592265 Fax 01592 596102
email liquid@cableinet.co.uk

Revision 8g

Accounting *for all*



Mike Tomkinson looks at by new book for anyone who needs to deal with accounts



I will be the first to admit that accounting is never going to glamorous or sexy but unfortunately it is very necessary. There are generally three approaches to accounting this includes household or personal finances:

- ignore it and hope for the best
- pay someone else to do it
- do it yourself.

If we look at each in turn there are advantages and disadvantages to all three approaches. The "ignore it" option is not possible in business – you'll go bust.

With personal accounts, it is possible not to look at bank statements, often on the pretext that you are too busy (making money, usually) and of course it looks a cheap method – no accountant to pay. Unfortunately, nothing could be further from the truth. The modern family current account will be a fairly complex mix of direct debits, mortgage payments, insurance, pensions, PEPs, ARCs, standing orders and income from various sources. Many people have a wide variety of different accounts and methods of payment – cheques, credit and debit cards, as well as cash.

Even if you rely on statements from the bank of your choice – mistakes happen and these usually err on the side that costs you money. No great surprise, but you can hardly complain if you don't understand the principles of book-keeping yourself.

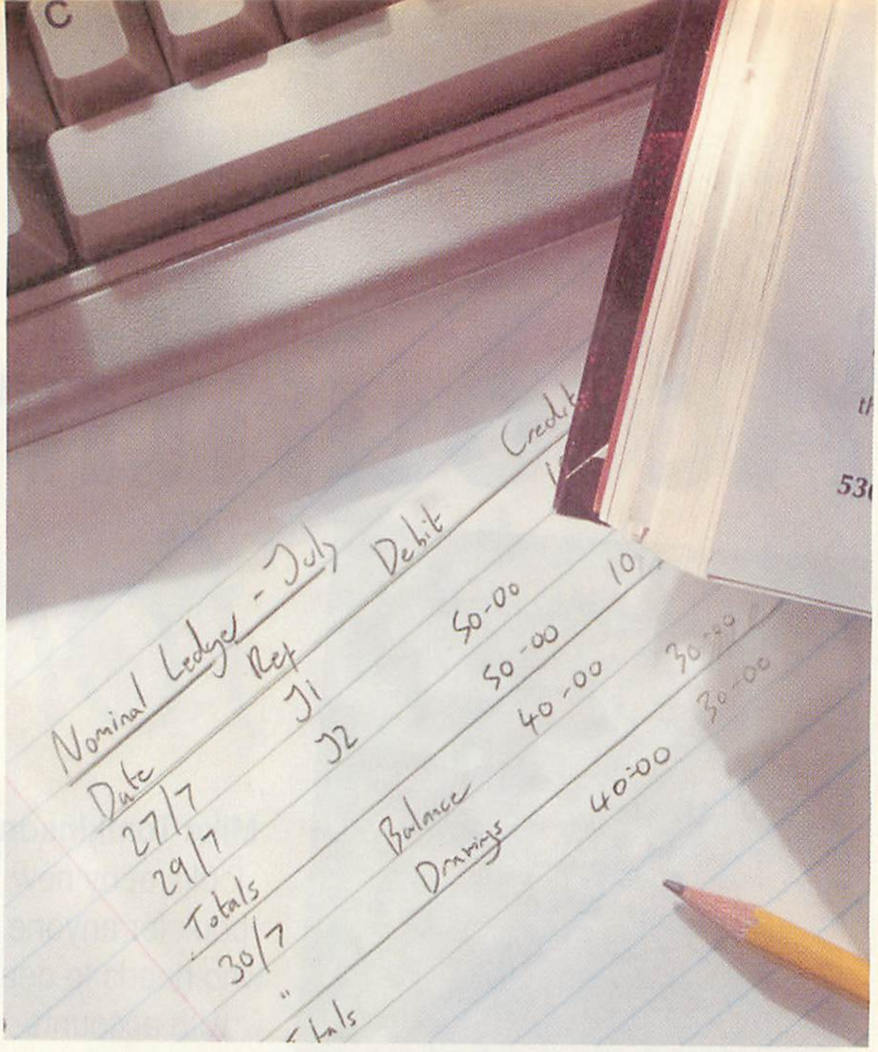
The background

Paying someone else to do your books is a good option – in the long run it will save you money. In a business it is almost compulsory but there are brave souls who scorn this approach and take the third option of doing it themselves, often using an accountant to check or verify their books. In all cases a book like **Accounting for Everyone** by Quentin Pain will be an excellent little read.

What has this to do with me and my Acorn? I hear you ask, well quite a lot actually. The more perceptive of you will recognise the name Quentin Pain. He is the author of Prophet – the definitive accounts package for the Acorn. He has also published *Personal Accounts 4* proving that good software exists on the Acorn for both business and personal account management. Of course, you can just use a spreadsheet but that method relies on you being able to use a such a tool properly in the first place. An accounts package is generally more supportive of the desired result – maintaining accounts.

The book

The book itself is an attractive, 187-page paperback which subtitles itself as the sim- ➤



plest guide to debits, credits and double-entry book-keeping. Whoa, I hear you say: what is double-entry book-keeping? Let me make a few points quite clear. Neither Prophet nor Personal Accounts actually use the double entry (d-e) method, but double-entry is the professional method of book-keeping. As the excellent glossary explains, it is a system which accounts for every aspect of a transaction – where it came from and where it went to. This from-and-to aspect of a transaction (called crediting and debiting) is what the term double-entry means.

This is very well explained in the opening section with copious diagrams illustrating the points as they're made. The text manages to be simple without being patronising and the book functions well on at least two levels; as a simple explanation of d-e book-keeping and – perhaps more importantly for anyone considering setting up a business – as a primer on accounting.

Quite frankly, the latter may be more important than the former for many readers. By understanding the principles of the d-e method you gain a very important insight into the complexities and simplicities of running a business. Some will read the book and think "that's easy"; others will think "that's difficult" and pay an accountant. Let us be quite clear here: even if you pay an accountant (as I do) you cannot escape a certain amount of record keeping and it better be right.

The second part of the book deals with the various types of accounts you are likely to encounter and such subjects as how to deal with VAT and the advantages of Limited Company status. It is certainly not a textbook on either, and that would be beyond its scope, but it does cover complexities in a simple way and is an excellent starting point for anyone wishing to get a handle on where their money goes.

The tax man cometh

VAT in itself can be a nightmare and, for that reason, many people avoid it despite the fact that it can be made to work to your advantage. If your book-keeping methodology is right it is no more complex than any other aspect of running a business. Similarly setting up a limited company and trading as such is almost always worth considering – you will be financially better off in most cases; this is illustrated by example in the book but perhaps not stated explicitly enough. For example there is no discussion of the fact that a Director will only be paying the lower Director's National Insurance Contribution – currently 10%.

Similarly, when dealing with using a car for both business and personal use, mention is made and an illustration given of the Road Fuel Scale Charge but no reference is made to the concessions awarded to those working on a fixed term contract for claiming a mileage allowance – like computer contractors. This method is both simpler to administer and usually more financially advantageous than claiming back the VAT on petrol.

Perhaps of more use to many will be the hints and tips section towards the back of the book which deals with such subjects as discounts, VAT, and stock valuations.

The final section of the book apart from the very good glossary and index (essential in such a book) is a discussion of the use of computer software to manage accounts. Throughout the book Quentin makes no mention of a specific accounts package or computer on which it will run. This gives the book a very general appeal and does not bracket it as a manual for a particular package running on a particular computer.

Even in the last section, the discussion is on the advantages and disadvantages of using a computer at all to do accounts. It also deals with the questions you need to ask of a software package. There is a small section on the Year 2000 millennium problem. Here all Acorn users can give a wry grin and pity our poor colleagues using computers which will be affected by the bug. We will not – nor will our software or operating systems. Many PC users who do accounting on their computers must be dreading the day. Still, better not be too smug as it is rarely an endearing trait.

Summing up

Do you need to use the d-e method of book-keeping? For most people the answer will probably be no. That should not stop you reading this book though which will give you an insight into the method. The answers to a variety of questions about accounts on and off the computer will easily save you the cost of the book.

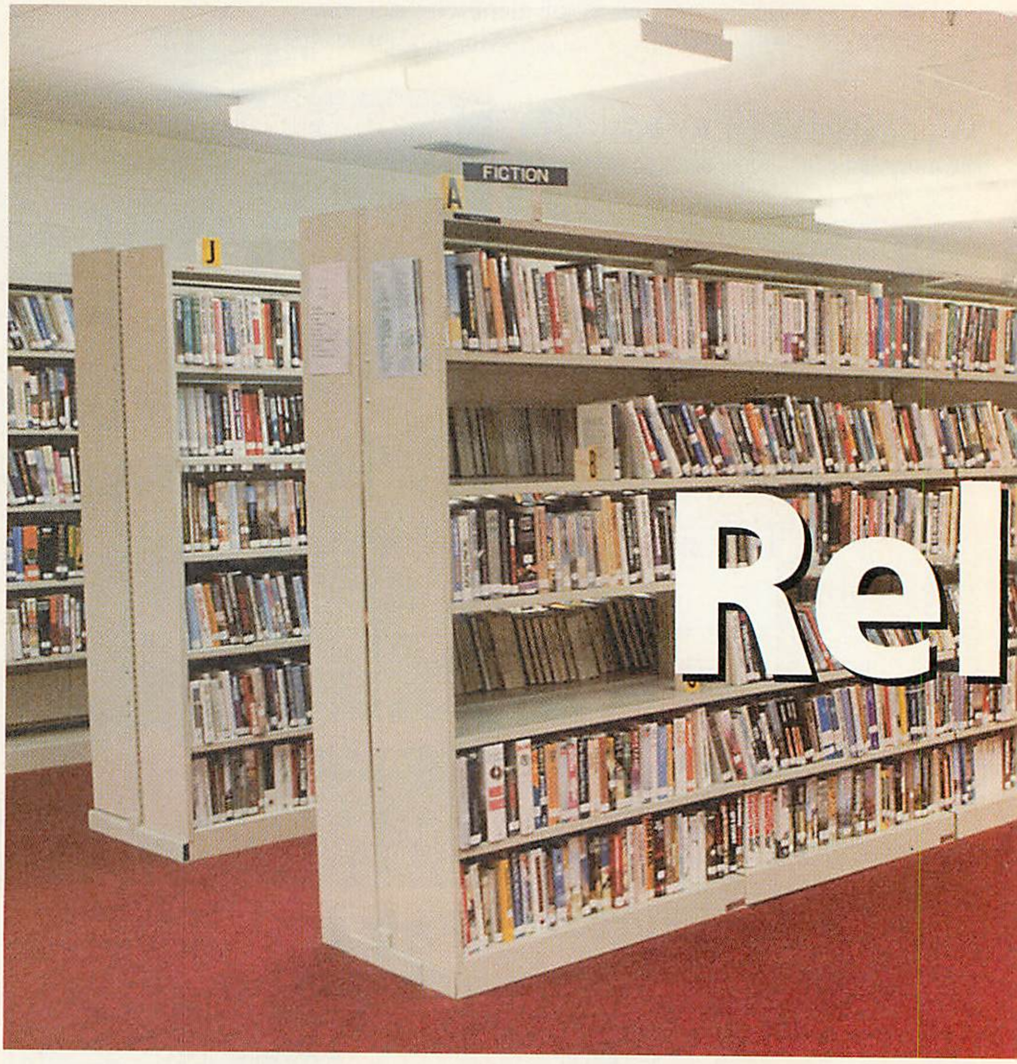
Money and its management is an inescapable part of modern life and generally becomes more complex – just wait until EMU and the ECU start to appear in your pockets. Most of us are more concerned with earning money rather than managing what they have. The secret is to know where it comes from and where it goes, and that is the point of this book.

It can be read as a textbook on double-entry bookkeeping and/or a general discussion of the financial management of a business, although the book and its author make no overt claims for the latter. It is well written and would make a good primer for anyone who has to get to grips with double-entry book-keeping or want to know about other options. The principles and good practice expounded here will keep you in good stead whatever option you choose.

Quentin clearly knows his subject matter but more importantly has presented it in a readable manner and in a way which can be understood by any reader. Buy it.

Product details

Product:	Quentin Pain: Accounting for Everyone
Supplier:	Apricote Studios
Telephone:	01354 680432
Web:	http://www.homepages.enterprise.net/apricote
Price:	£8.99
ISBN:	1-902255-00-3



John Pettigrew turns to the final chapter on creating databases

Welcome back. Now, using a database can become a tedious thing – repeating the same operations over and over again. However, Database Management Systems (DBMS) usually offer help in various forms including scripts and SQL or Structured Query Language.

Quite simply a script is a series of instructions to a DBMS. These instructions may be as basic as changing to a different layout, or involve complex operations that change the data in the database or, indeed, in different databases. Every DBMS has its own scripting language and the examples discussed here are specific to DataPower 2. However, the principles are applicable to most systems.

DataPower 2 allows an additional method of interacting with the information in the database – SQL, commonly pronounced 'sequel'. Invented in the early '70s for creating, modifying and interrogating relational databases, you don't need to know anything about where or how the data is stored to use it, merely the names of the tables and fields you want to access. The particular dialect of SQL implemented by DataPower 2 is the same as the one used by Microsoft Access, so it should be fairly easy to get hold of a textbook on it. However, any SQL book will give you the general idea, for it is an 'industry standard' way of interacting with data.

What is SQL?

The most useful features of SQL for most people are the commands that allow databases to be searched and specific pieces of data extracted from them. One of the reasons SQL is so commonly used is that queries are fairly understandable, the original name for SQL was Structured English Query Language. For example, considering our LETS database from last month, the following query:

```
Select 'Full name' From 'Members'
Where 'Status' Not 'I*'
```

means that the DBMS should select the contents of the field called 'Full name' from the 'Members' table, provided that the 'Status' field does not contain 'I' as its first letter. That is, it will produce a list of the names of all those members who are actively trading – the 'I' is only placed in the Status field when members leave the system. A summary of the syntax of this Select command is given in the panel at the end of the article.

A good way of getting the feel of SQL is to build queries using the normal graphical tools provided by DataPower 2 and look at the SQL that is produced. However, you should be aware that there are certain operations that DataPower 2 can perform that are not properly implemented in its SQL yet, but these mostly concern using summary fields in the query definition and are not all that significant.

This is all very well, you might say, but what use is it? Even though the graphical tools provided by DataPower 2 are very powerful, they have limitations. The directories we produced last month – the Blue and Yellow pages – have a problem when printed with large areas of blank paper, this is because the fields must be large enough to include all possible records, even though some entries may be much smaller than this, for instance a member with ten offers and another with but a single offer.

Those of you familiar with other DBMSs may have encountered a feature which allows fields to be 'shrunk' to fit their contents; thus, the member with one offer only takes up the space needed by that entry, while still giving enough space to the member with ten offers. This powerful feature is promised for the next update of DataPower 2's report generator but until then we must find ways to get around this problem. One way to do this is to save the data as a tab-separated file, which can be opened in Publisher or a similar program and formatted however you like.

Unfortunately, if you try this, you'll find that every field in every table attached to this layout will show up in the *tab file*, which makes the task more complicated than necessary. To produce a tab file with only the fields we are interested in, we need an SQL query, because this allows us to specify which fields are to be retrieved. For example, the Yellow pages have a subview onto the Offers table for each entry in the Category table. If we used a simple Select query, we would produce a series of entries, each consisting of the category name followed by the offer, something like this:

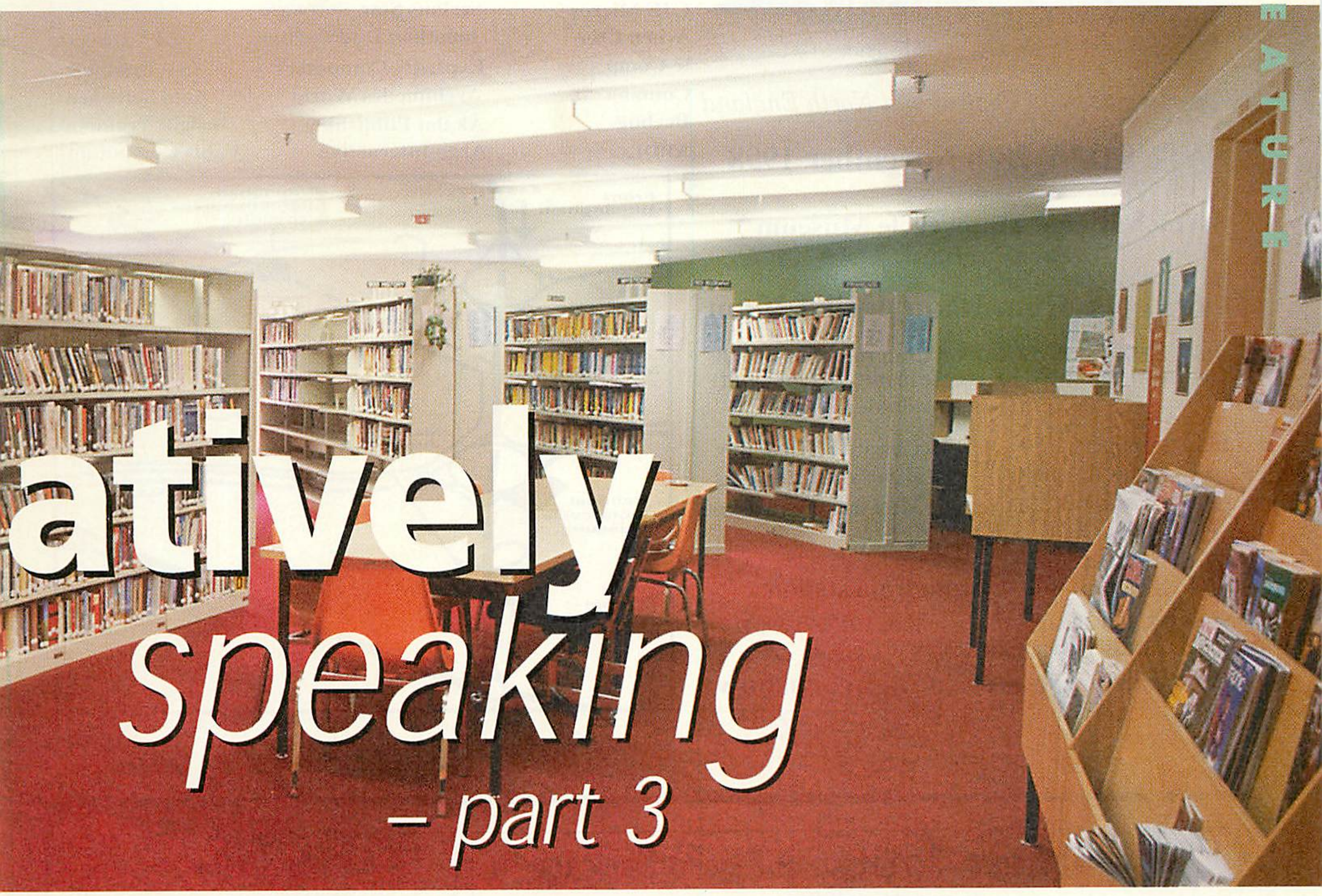
```
Category<tab>Offer<tab>MemberNo
Category<tab>Offer<tab>MemberNo
Category<tab>Offer<tab>MemberNo
```

and so on. But for the Yellow pages directory, we want something more like:

```
Category
Offer<tab>MemberNo
Offer<tab>MemberNo
Offer<tab>MemberNo
```

and, preferably, to have the offers listed in reverse member order – newest members first. To do this sort the records into descending numerical order (click twice on Account), name this query *'sorted offers'*. Then add the 'sorted offers' query

atively speaking – part 3



into the 'join for Yellow pages' query so that all records from Categories and only matching records from 'sorted offers' are shown.

In order to produce the tab file, we need to create a new layout based on the Yellow page' layout called 'export Yellow pages'. Delete all fields except CatDescn' and create a calculation field called 'calculated offers' with this formula:

```
Sum('Sorted
offers.Offer'+Chr$(9)+'Sorted
offers.Account'+Chr$(10)) For
'Categories'
```

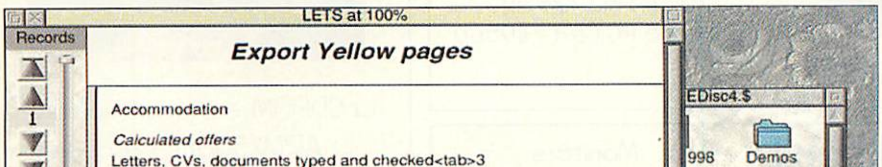


Figure I: The 'Export Yellow pages' layout, showing the results of the calculation field, summing the offers within each category

This formula will produce a value of:

```
Offer<tab>MemberNo<return>
```

for each entry within the Offers table and summarises this over all the offers that fall into each individual category; Chr$(9) is a tab character, Chr$(10) a new line. If you make the field large enough on the screen, you can see the results (Figure. I).

Now, create a new SQL query from the 'export Yellow pages' layout, calling it 'export Yellow pages'. The default SQL for this query will resemble:

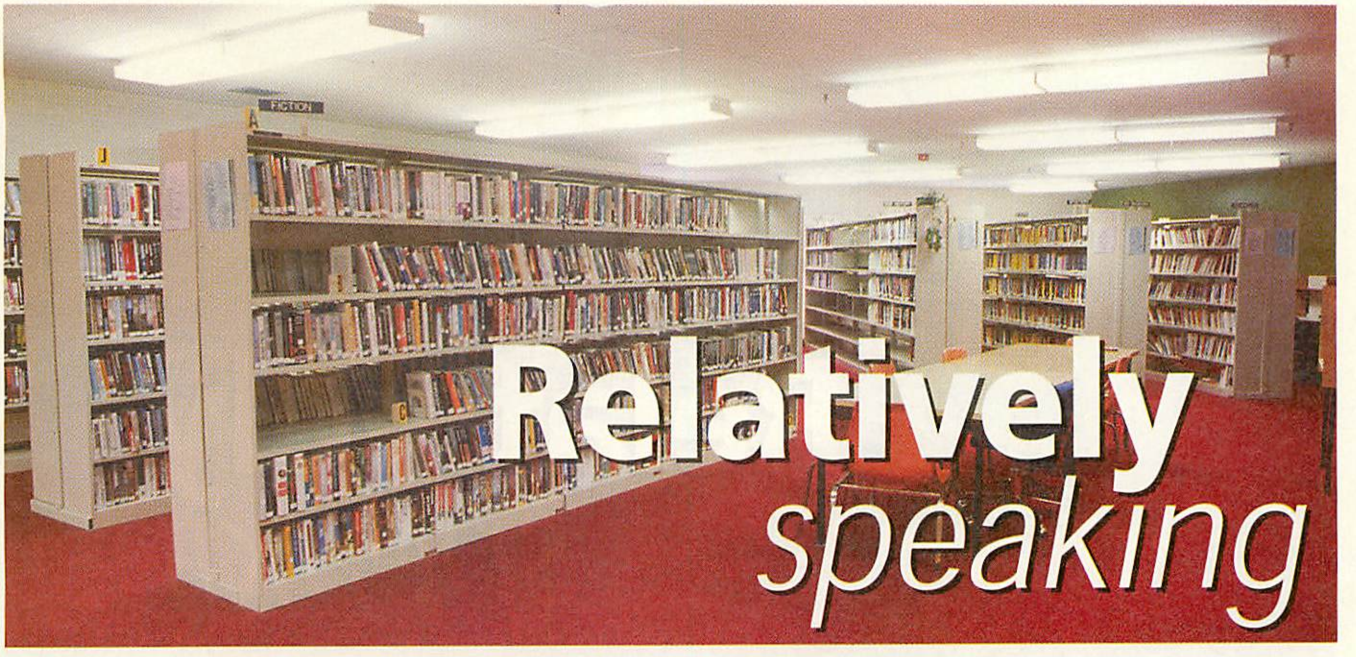
```
Select Subview '*' From 'Join for
Yellow pages'
```

which means that all records are selected – the * character is used as shorthand in SQL. To limit the query so that it only returns the data we want, change this SQL to read:

```
Select Subview 'CatDescn',
'Calculated offers' From 'Join for
Yellow pages' Order by 'CatDescn'
```

The Subview means that only one record will be produced per category. Without this, a new record will be created in the query for each individual offer.

This query now only contains the fields we have specified in the Select clause so ➤



Relatively *speaking*

when we export the data as a tab file, only these fields are included. Try attaching the 'export Yellow pages' layout to the query and adding fields to it – the only options available are those named in the query.

In a similar way, we can produce a tab file of the Blue pages directory. Both of these files can now be relatively easily imported into DTP software and formatted as needed. If you try this, you'll see that the tab characters from the calculated fields come through as '\t' and the new lines a '\n'; these can be easily changed back using a global find and replace.

What is a script?

As I have said, scripts are a sequence of instructions to the DBMS. DataPower 2 has a very powerful scripting language already built in, but unfortunately the documentation is not terribly helpful in working out how to use it although a tutorial is promised 'soon'.

For example, in a complex database such as our LETS one, it becomes tedious to use the menu to select which layout we want to use. Instead, we can create a layout that merely contains a series of buttons that take us to the various layouts – a menu screen. If you have left the first layout of the database blank, this is an ideal place for the menu (Figure. II). For example, a button to change from the current layout to the 'Account statement' layout when the left mouse button is clicked over it would have the following script:

```
On ClickLeft Layout('Account statement')
```

However, much more can be accomplished with scripts than this. It is possible to read from and write to fields, to open and close other databases, to define and use queries (searches, updates, deletes), to export data, and so on. In order to be able to do all these things, DataPower 2's scripting language is fairly complex, but there is a list of the commands in the script-editing window (Figure. III).

DataPower's scripting language is object oriented. This means that all the instructions deal with objects that have been previously defined. If I want to read the value of a field into the script I must already have defined the variable; if I want to use a search, I must define it. This is not as daunting as it sounds.

There are several scripts that would be useful to users of the LETS database, mostly involved with automating the export of the tab files we have constructed using SQL. In order to do this, we can create a button and attach a script to it that will, when clicked, export the data to a named file.

This script might read something like this:

```
On ClickLeft
Dim qdef As QueryDef
qdef=CurrentDB.QueryDef("Export
    Yellow pages")
qdef.ExportTAB("adfs::4.$.Yellow")
```

What does this mean? Considering each line at a time:

1) Execute the script if the left mouse button is clicked over the button
2) Create a variable known as 'qdef' and prepare to store a query definition in it.
3) From the currently open database, store the query called 'export Yellow pages' in the variable 'qdef'.
4) Export the results of the query pointed to by 'qdef' as a Tab file to the named file.

This script performs well, but there is one refinement we might add: assuming that the database will be operating over a period of time, it would be nice if the script would name the exported file according to the current date, so that older versions are not overwritten. This can be achieved by

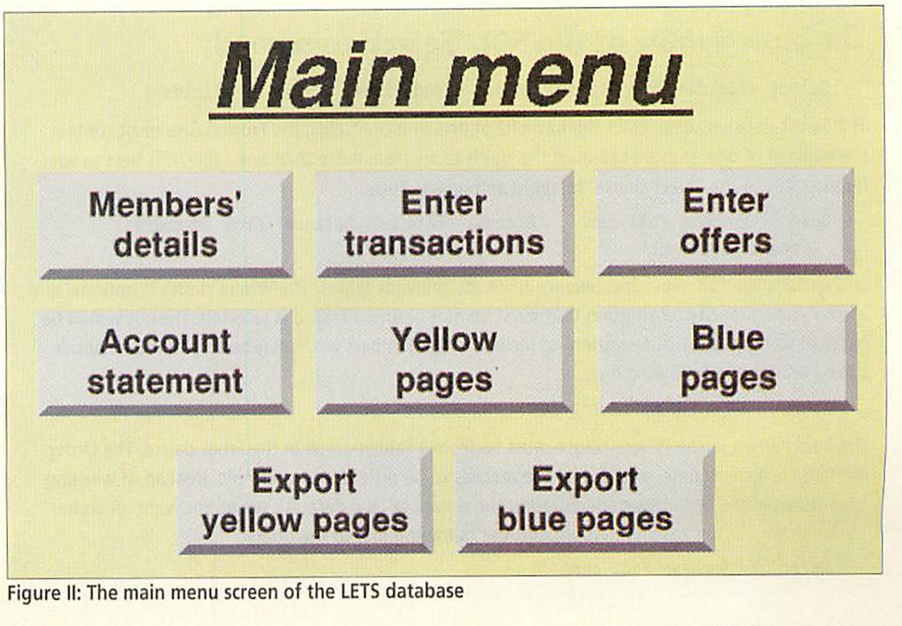
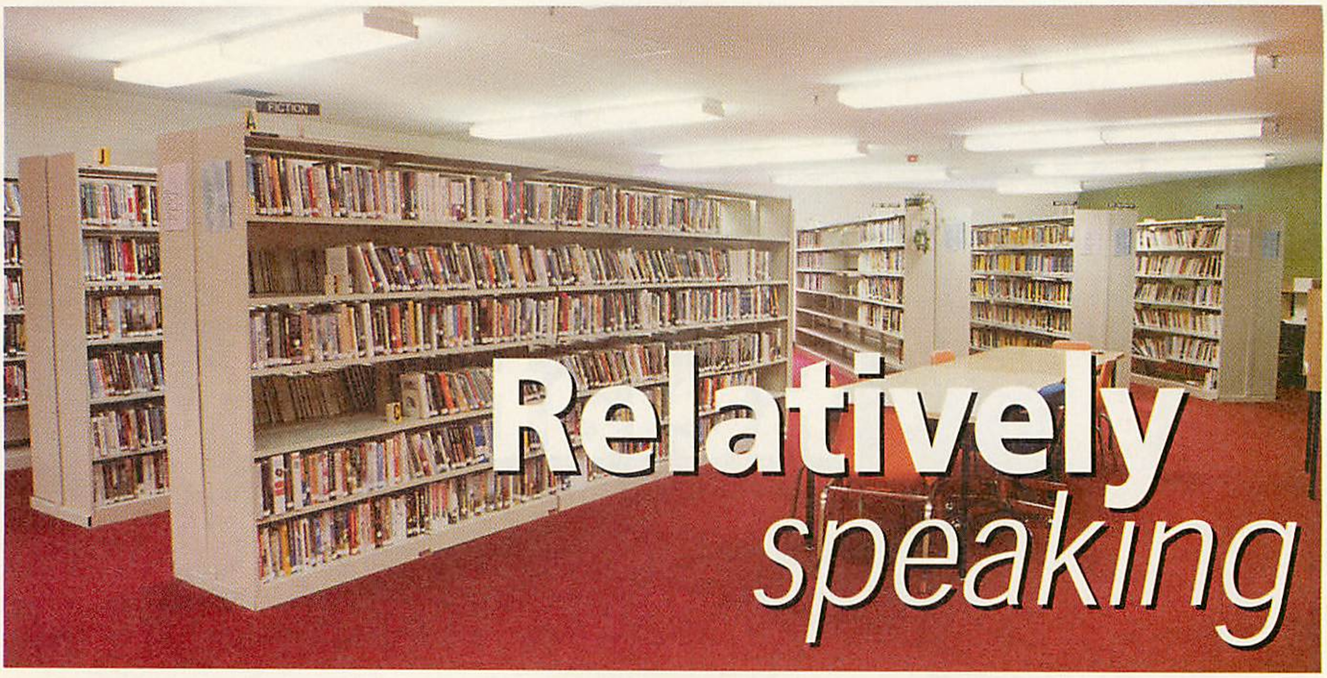


Figure II: The main menu screen of the LETS database



Relatively speaking

➤ adding the following line between lines 1 and 2 of the script:

```
Dim s As Text, t As Text
s=Str$(Today)
t=Mid$(s,Instr(s," ",1)+1,3)
t=t+Right$(s,4)
```

and then changing the last line to read:

```
qdef.ExportTAB("adfs::4.$.Yel"+t)
```

This script first defines two variables as text strings. In the first of these there's a string based on today's date. The second stores the first three characters after the first space in this string (that is, the first three letters of the month) and the last four characters contain the year. This means that the file would produce a name something like "YelJan1999". There are several other ways to achieve a similar result, some more elegant than this.

Hopefully, this brief introduction will give you a handle on the way DataPower 2 scripts work. However, as with anything else, the only way really to get to grips with it is to use it. Think of things you do to a database, then try to write a script to automate the process, whether this involves changing layouts, exporting data in different formats, defining and using queries, reading or writing values in fields, or combinations of these.

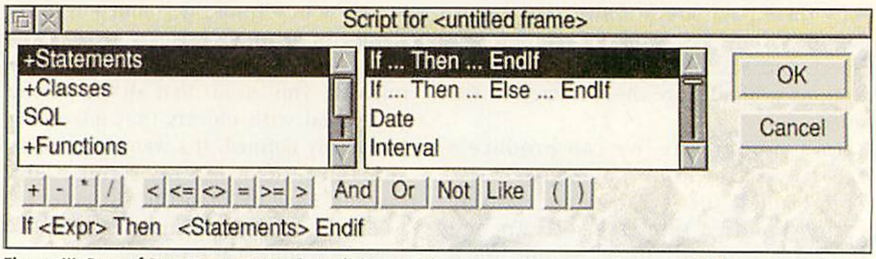


Figure III: Part of DataPower 2's script-editing window, showing some of the available commands

How far have we come?

Looking back over these three articles, we have covered the basic concepts of relational databases and DBMSs, first constructing a simple database to keep track of bank balances and transactions, then moving on to build a complex transaction system for use in real life, running a Local Exchange Trading Scheme.

In the course of producing this database, we discovered how to make the DBMS produce complicated results without this being visible to the user – all the clever stuff is hidden away inside. While producing the reports from this database, the current shortcomings of DataPower 2 meant that we took a look at using SQL and scripts to give us the results we needed. The lack of documentation at present on both SQL and scripts need not be a barrier to your experimenting with both, because both SQL and scripts are reasonably easy to get the hang of, at least enough for normal purposes.

On the cover disc is the completed LETS database for you to have a look at though you will need a copy of DataPower 2. I hope you agree that my initial question "Are relational databases as forbidding as they look?" has been answered with, No. With a little planning, the right tools and a certain amount of perseverance, impressive results can be produced using standard RISC OS machines – everything you have seen was done on an A5000.

The basic syntax of the SQL 'Select' command

```
Select <fields> From <table> [Where <condition>] [Order by <fields>]
```

The Select clause must contain the name(s) of one or more fields; the From clause must contain the name(s) of one or more tables. If the fields come from more than one table, it is best to specify the table in the Select clause, to avoid ambiguity. Thus:

```
Select 'Members.Full name', 'Account statement.Balance' From 'Members',
'Account statement'
```

will retrieve the full name and balance from the relevant tables. The Where clause is optional and allows you to specify a condition that must be met before a record is selected. Thus, it would be possible to restrict the above query to include only members with membership numbers above 300 by adding the following line:

```
Where 'Members.MemberNo' > 300
```

The field named in the Where clause must be from a table named in the From clause. The Order by clause is also optional and allows the records to be ordered; for example, instead of wanting the records in the order they are stored in the database (the default), we might want an alphabetical listing. In this case, we would add the following line to the query:

```
Order by 'Members.Full name'
```



Golden money

Mike Tomkinson looks at the latest home accounts package to come out of Apricote

Personal accounts – those used by an individual or family – are becoming increasingly complex. The days of a simple current account with perhaps one wage or salary are probably long gone. As for the wide range of payment methods available to us, it is difficult to keep track of even one credit card. Families may be DINKY (Dual Income No Kids Yet) or have the customary 2.4 children, but whatever the configuration finances are likely to be more complex than can be managed on the back of the traditional fag packet.

They will certainly need more management and accountability for the Taxman. Self Assessment along the lines of the American model is a modern fact of life and woebetide you if you get it wrong or are late with your return – the fines can be considerable. You may live life in the fast lane by occasionally speeding on a motorway or parking on a double yellow line and think yourself a bit of a lad (or lass) for getting away with it – but do not mess with the Taxman. And a VATman makes a Taxman look like a kindly aunt by comparison.

The bottom line is that you are going to need help. This can come in the form of an accountant and for many it is money well spent. There are an increasing number of firms to choose to assist you with Self Assessment – for a fee of course. Naturally, as someone who already owns an Acorn computer, you are not the sort to let such a natural advantage slip from your grasp.

Take one computer...

All you need is some software and a little discipline. Well the good news is that the software is available to buy, so all that is left is the discipline. *Personal Accounts 4* is, well, the fourth incarnation of the Personal Accounts package from Quentin Pain of Apricote Studios. It could be considered a sibling of Prophet but quite frankly it is aimed at a different market. While Prophet is for business, Personal Accounts 4 is for, well, personal accounts.

Perhaps that needs qualifying further, as Personal Accounts 4 could also be used to administer the finances of a small club or very small non-VAT registered business. However, I do not recommend it – not because of any inherent flaw with Personal Accounts 4, but simply because it was not designed for that purpose. If you need that greater level of functionality look at the latest version of Prophet.

As you would expect the software is fully multi-tasking and takes full advantage of RISC OS. Installation is easy but the accompanying manual – to which we return later – still devotes five pages to help with installing and initialising the disc. You are not left to guess or rely on past experience. Such close attention to detail bodes well for the software. Too much software is let down by poor manuals and poor attention to detail. Fortunately Quentin is also a good technical author.

Having initialised the disc and copied the program across to your hard disc you are ready to start – but start where? As I have already said, personal finances can be complex. Where and with what do you start? With the tutorial.

However, before you begin it's a good idea to read the Overview section which explains the main windows and their functions and also covers the principles of accounting. There is even a section for those more used to double-entry book-keeping which explains the main difference between the way Personal Accounts 4 works and the d-e method. Quite frankly the principles are the same, as both use a method of crediting from an account and debiting to an account. I know it looks wrong but it's not. This is effectively d-e without the need for posting so that the account is always up to date.

...add some discipline

The tutorial comes next, especially for those new to the program or book-keeping in general. It contains six files each illustrating a particular number of points, the first being how to set up account names. PA4 will track up to 96 different accounts – more than enough for most users. Setting up can be a pain but it is a once-only operation for most of us and this is where the discipline comes in. No pain (no pun) no gain.

The benefits of reconciling a bank statement – checking it against what you know should have gone out of the account -only become apparent when you discover a mistake, especially on the part of the bank. Most banks are perfectly capable of making ➤

Personal Accounts : Standing Orders/Direct Debits

Start date	Num	P	F	From	To	Ref	Total	Description	Done	Left	Next date	RESET
30.04.98	12	M	1	1	M1#	S/O	100.00	ABC Building Soc	0	12	30.04.98	Reset
16.04.98	52	D	7	2	P1#	Milk	3.50	The weekly milk b	0	52	16.04.98	Reset
15.02.98	12	D	14	W1#	1	DD		Fortnightly wages	0	12	15.02.98	Reset
12.08.98	999	M	3	1	E1#	DD	100.00	Electricity	0	999	12.08.98	Reset
31.01.98	999	Y	1	1	C1#		150.00	Road Fund Licen	0	999	31.01.98	Reset
24.05.98	1	M	1	1	D1#	DD	41.00	Council Tax 1st	0	1	24.05.98	Reset
24.06.98	9	M	1	1	D1#	DD	40.00	Council Tax-rest	0	9	24.06.98	Reset
31.01.98	999	M	6	1	I1#			Income Tax	0	999	31.01.98	Reset
												Reset
												Reset
												Reset
												Reset
												Reset
												Reset
												Reset
												Reset
												Reset
												Reset

Standing orders/direct debits



mistakes and they are very rarely in your favour. A common mistake is the failure to cancel a direct debit or standing order despite instructions. Most statements are so cryptic that they are difficult to read which means it is easy to continue to pay for something you no longer require. Direct debits and standing orders are extremely useful but are a licence for someone else to take money out of your bank account. Hence the benefit of some aid to checking.

Step by step

The tutorial takes you steadily through the process of setting up the account(s) and is best followed by you setting up your own version as each stage progresses so that at the end most of the work is complete.

Be warned – the tutorial is comprehensive – it covers from pages 15 to 96 of a manual which is 122 pages long. You will need to set aside a few hours to carefully go through it. You will also need a considerable amount of information: bank statements, mortgage records, salary slips and so on. It is worth asking the bank for a printout of all direct debits and standing orders set up against your account(s) prior to starting, but be aware that most banks will charge you for this. Once armed with the information, you can program these regular payments into Personal Accounts 4.

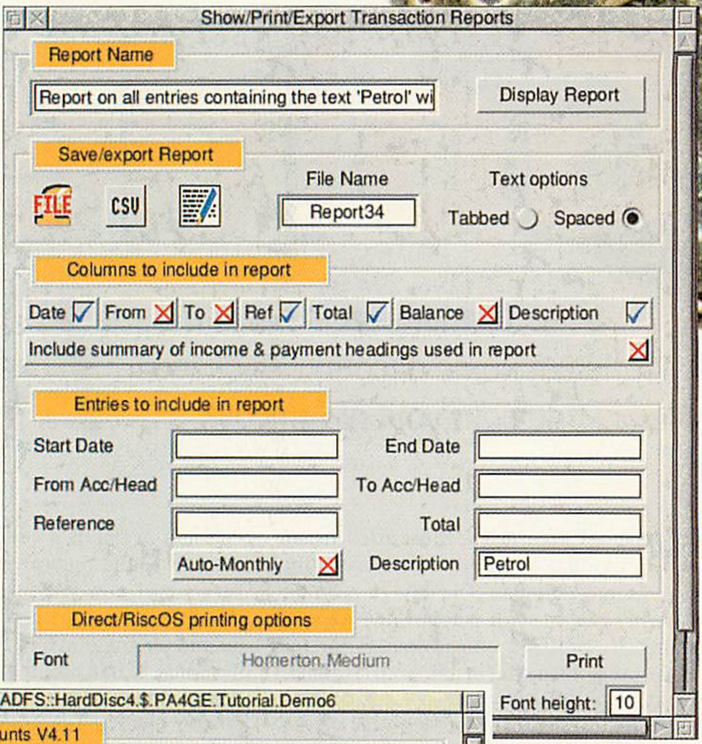
As you know there may be other regular payments into and out of the account and Personal Accounts 4 deals with these via Quick Entry Presets. As the name suggests this is a method of quickly entering a transaction which happens fairly often but not regularly enough to warrant a standing order or direct debit.

As the tutorial guides you through the program and the accompanying files illustrate the points, you'll find that the tutorial is really also a User Guide. At the end are the Advanced Features and Hints and Tips sections, and, as we have come to expect with Apricote Studios publications, the manual is well indexed.

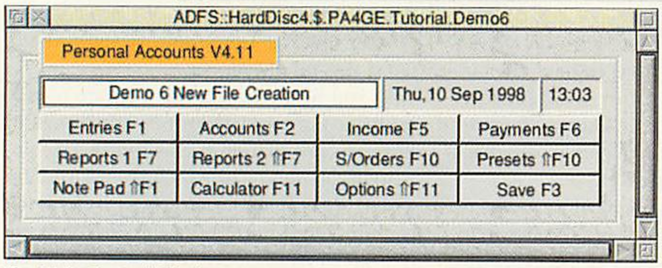
Access permitted

One thing I have not mentioned is that the various sections of the program can all be reached in a variety of different ways depending on your preferences. The original disc contains a key-strip in !Draw format and though this sort of thing seems to have gone a little out of style since the demise of the A310/A440 with the wide bar or plastic insert on the top of the keyboard it is very useful. There are also keyboard short cuts – Shift F11 gives you the options menu – the main control window and icons on the Entries window.

If I have any criticisms it would be that the program can appear to present the new user with too many windows. It is too easy to get lost and it requires real discipline to keep open only the window you require. This may seem like heresy but about the only thing I do prefer about Windows 95, and NT in particular, is the way in which the Filer allows you to automatically tile windows. I realise that it would be unfair to single Personal Accounts 4 out in this respect for a flaw (in my opinion) in the way RISC OS handles open windows. Of course in practice, and in particular after the program has been set up, you can usually have fewer windows open. The author assures me that most people only regularly use three main windows.



Report Preparation



The Main Control Window

A particular feature I did like was the Note Pad facility which does exactly what you would expect of it and a calculator for the arithmetically challenged. Whatever we may think about it our computerised accounts will eventually require that a printout be obtained – if only so that we can use the figures to fill in the Tax Assessment forms.

There are two Report windows. The first allows you to produce a customised report of any and all transactions which relate to your entries. The second allows summaries of some of the other windows. These reports can be exported to your favourite text editor and on into your favourite DTP/WP package.

As you might expect with a strongly figures-based program you can also import and export via the very useful CSV (comma separated value) filetype.

Conclusion

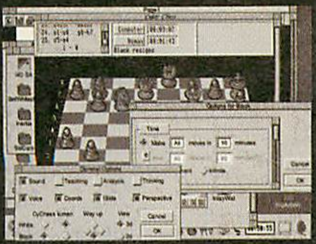
I hope you are convinced of the need for such software in maintaining your accounts. If not then the Taxman and his forms may yet convince you.

I liked PA4 once I got it set up and into the habit of using it. The one thing not for sale is the discipline to make you use it regularly enough to benefit from it. That you provide yourself, and the program does not act as a barrier. Buy it and use it before the next tax year comes around – it will save you money, and if that does not convince you nothing I say will. AU

Product details

Product:	Personal Accounts 4
Price:	£49.95 inc VAT (£25 to upgrade)
Supplier:	Apricote Studios
Telephone:	01354 680432
Web:	http://www.homepages.enterprise.net/apricote

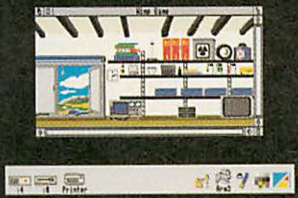
PRODUCED by The Fourth Dimension . . . . THE Acorn Games SPECIALISTS



Cyber Chess - £35



Chocks Away - £30



The Wimp Game - £20

Please specify Computer model when ordering, as some titles require a particular version.



Stunt Racer 2000 - £35



Ground Hog - £12



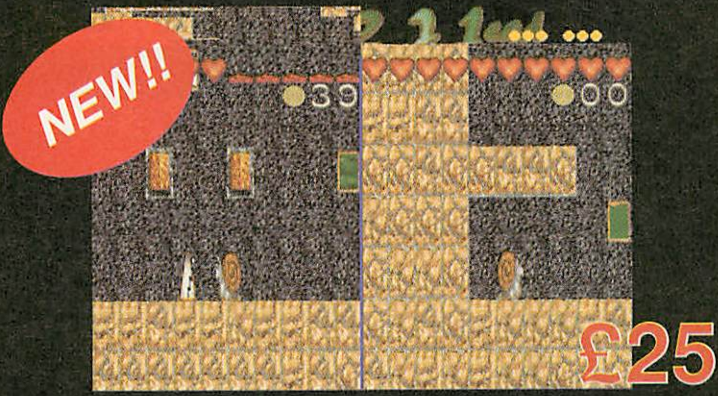
Enter the Realm - £25

We're back ...

After briefly being based on the Isle of Man we are now part of the CJE Micro group in Worthing. We have two new games below, and have plans for the future, see our new web site for the latest demos, screenshots and compatibility details.

http://www.cje.co.uk/4d/

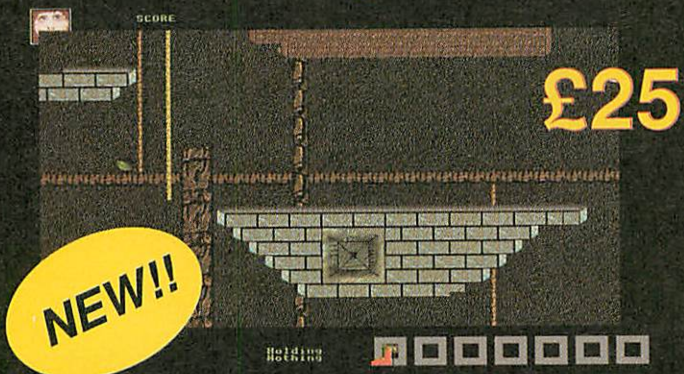
Super Snail



"A game that just plain feels good ..."

Super Snail places you in the control of Sam the Snail. Sam's a snail quite unlike any other - in fact, he's much faster than any snail you'll ever have met before. Sam has to move around Snalia, collecting all sorts of goodies whilst avoiding the various different adversaries along the way.

Morph



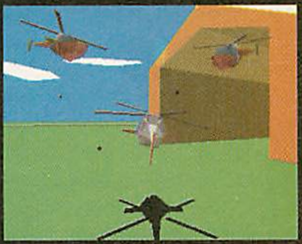
"Another classic adventure from 4D"

Morph is a massive new 4D adventure, from Dougie Frior; author of Pushy. Placing you in control of the lead character, you work your way around the castle collecting the bonuses and solving puzzles as the game progresses. The game is so technically superior to any previous release that it'll require a Risc PC to work at its best; but still works on an A3010 [with hard disc].

Real McCoy 6

Technodream
Silverball
Bloodlust
Carnage Inc.

Real McCoy 6 - £35



Chopper Force - £30



Drifter - £35

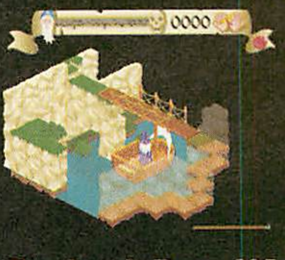
Please specify Computer model when ordering, as some titles require a particular version.



Haunted House - £25



Pushy - £12



Pandora's Box - £25

The Fourth Dimension, 78 Brighton Road, Worthing, West Sussex BN11 2EN
Tel: 01903 213361 Fax: 01903 523679 Email: 4d@cje.co.uk Web: www.cje.co.uk/4d/

Prices and specifications are correct at the time of going to press. All prices are fully inclusive. E&OE.

GAME

September 17th will be a date etched on our minds; the death of Acorn's workstation division, a result of their latest strategic review, has shaken the whole of the Acorn family to the core. It's a move that, with hindsight, might have been predicted, but the timing of the decision and the way in which it was announced have left a lot of people in shock, myself included.

The events have been reported with reassuring speed and honesty by many of the Acorn enthusiast websites out there; both AcornArcade (*www.acornarcade.com*) and the Cybervillage (*www.cybervillage.co.uk*) have comprehensive sections covering the crisis. Anyone wanting to discover the details behind the headlines would be well advised to spend some time reading through the material presented there.

AcornArcade's letters section holds statements from the major players in the Acorn games market, including TBA and Artex Software, and although the tone is often sad, the overriding message is that games production will carry on as normal while the companies still receive support from the public. The major disappointment is that the Acorn World '98 show has been postponed indefinitely, and this has affected the release schedules of a number of products.

It's perhaps ironic that the games market i s enjoying a long-awaited renaissance just as the machine destined to take it to a new level is now winging its way to the great drawing-board in the sky. It's also interesting to note that some classic Acorn games have been revamped and released as major PC titles – *Sentinel Returns* has been around for a few months and now exists on the Playstation as well as the PC, and David Braben's *Zarch* has been souped up and has just been released under the name *Virus 2000*.

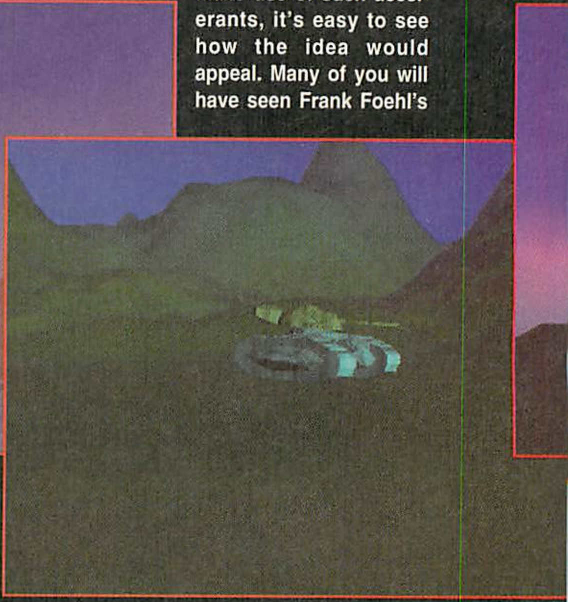
I guess this shows how resilient some of the old titles were – I'm aware that R-Comp Interactive's operations don't find favour with all parties, but I must be honest and say that I admire their commitment to the Acorn market. Conversions alone won't push the games scene forward to new territory, but we do have a lot of catching up to do, and being able to play some of the better PC titles will enable the Acorn faithful to see what's been created in the past, and so learn how to improve on it.

The hardware specifications of the Phoebe were the cause of a great deal of speculation in the news groups, and the merest whisperings of the development of three- dimensional accelerator cards for the Acorn were enough to create waves of excitement. With a growing number of games being released that could make use of such accelerants, it's easy to see how the idea would appeal. Many of you will have seen Frank Foehl's



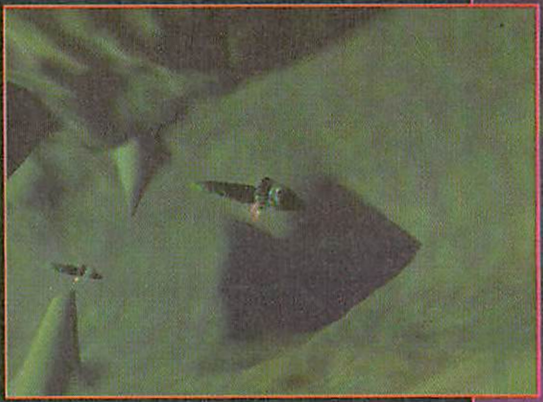






SHOW

Steve Mumford ponders the future of the games scene in light of Acorn's shock decision

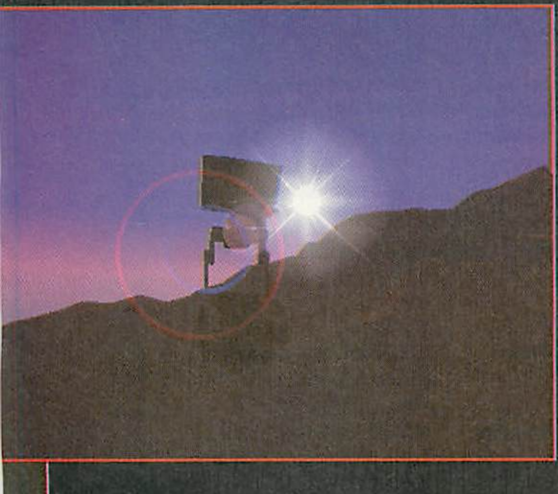




rolling demo of *Iron Dignity*, and after the project was taken in by Artex this product was rumoured to be aimed squarely at Phoebe.

Barring divine intervention, the Risc PC replacement isn't going to see the light of day for a while (if ever) however Artex are still confident that they can do the game justice on a StrongARM-based Risc PC. In an open letter published shortly after Acorn's restructuring was announced, Jan Klose explained that the game was now being written with the PC market in mind, and a concurrent release for the PC and Acorn would occur in 1999, if all goes according to plan. Artex Software's other forthcoming title, *Tek*, was aimed at the network computer market, and so the cancellation of the Phoebe doesn't have an impact on the game anyway.

My sympathies go out to anyone affected by Acorn's decision, and I can only hope that the meetings currently taking place yield a viable solution. At this stage we can only wait and it's bound to be a tense time for all of us. The best thing that we can do now is to focus on the growth that the games market has achieved in the last few months; the recent success was brought about by plenty of hard work and commitment from games publishers to website maintainers. We should recognise that it was these efforts that bolstered the flagging games market and not the promise of a new Acorn machine. We're not stretching the power of the Risc PC yet, and although it would be more than pleasant to have a machine with an even greater 'wow' factor, there's plenty of life in the old beast yet.



Still to come

Despite all that has been reported so far, we do have things to look forward to – R-Comp Interactive have just released *Descent*, with *Heroes of Might and Magic II* and *Quake* just around the corner. *Descent* is a fully three-dimensional shoot-em-up in which you pilot a nippy little spacecraft through a series of mines overrun by predictably manic robots. I've had a quick peek and I'm impressed with what I've seen so far (after playing the game for a few minutes, I definitely prefer the Acorn conversion to the PC original), but tune in next time to read Graham Nelson's full review.



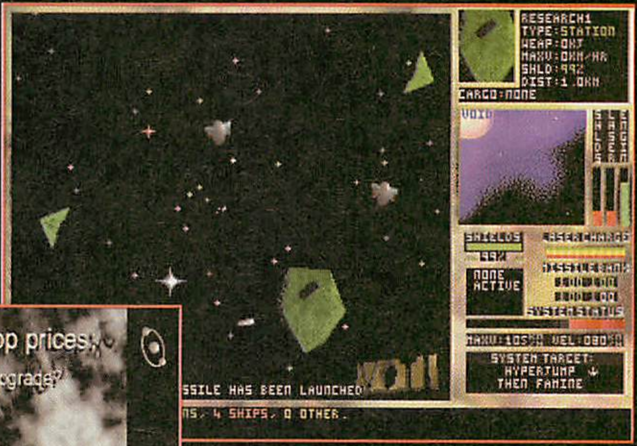
Descent

SunBurst

GAME SHOW

SunBurst

Steve Mumford takes a trip through hyperspace into a new game from *Visions of the Impossible*





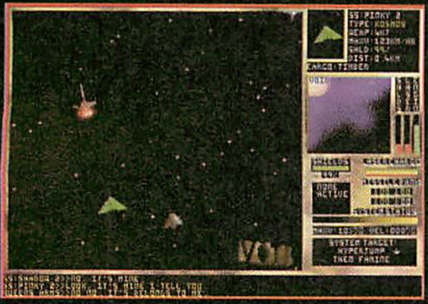
If you've played a *Columns*-style puzzle game named *Super Foul Egg*, you're already familiar with the works of Owain Cole, a programmer from the VOTI stable. It's a game I found both infuriating and incredibly addictive, a marvellously evocative combination if you can get the balance right. *SunBurst* is VOTI's latest offering, and differs completely from their previous productions, both in scale and subject material.

Best described as a genetic hybrid of *Elite* and *Spheres of Chaos*, the game spans four galaxies and sports weapons and craft upgrades, supplies trading and bounty hunting, but its mission strategy is one of its major strengths. The ultimate goal is to prevent a colossal bomb from destroying a planet; however, it's hard to tell for certain, as Owain has provided five background stories to choose from.

To cut to the chase, you step into the shoes of a mercenary working for the Empire; there are two other races, the Poliniss, a strong trading race, and the Virain, allies of the Poliniss and enemies of the Empire. It's up to you who you side with, but the game starts with an Empire package in the ship's hold and it'd be rude (not to mention fatal) to refuse to deliver it.

As mentioned earlier, there are four main galaxies to explore, each with a number of worlds or space stations scattered throughout. Transport is available between galaxies by way of warp gates – there's one in every system and they're maintained by a nearby space station. Once you've chosen your destination via the ship's computer, flying through the gate will take you through to the destination galaxy and you're free to continue your travels from there.

The spacecraft available in *SunBurst* are easy to control – you can adjust their rotation and forward velocity, so it's just like playing a game of *Meteors*. This means that it's very easy to pick up the basics, leaving you to concentrate on the more advanced aspects of the game, from reviewing and analysing any radio messages you might have received to balancing the ship's energy systems. Shields, engine and lasers are powered from one main reactor, and by splitting the power between the three services, you can boost one aspect of your ship's performance at the expense of another. For instance, boosting laser power to maximum will leave you either virtually immobile or unprotected.



Starmaps and radar scans are projected HUD-style into the ship's cockpit, and allow you to see your immediate surroundings as an array of coloured dots that appear in the centre of the screen, superimposed on the standard external space view. It takes a little time to differentiate the radar map from the starfield behind it, but with a little practice it's quite a smart way of presenting the information. Although I was happy with the default key layout, it's possible to alter them yourself as long as you know the appropriate INKEY values – a file named *!Inkeys* exists in the *!Sunburst* directory, but please make a backup before you change it.

Battles are inevitable and although the control system is simple to get to grips with, simplicity of control itself is not enough to rescue you from a horde of bloodthirsty pilots – while your funds are low, pick your fights carefully and indulge in a spot of asteroid-mining to boost the coffers. Flooding the market at one space station leads to a fall in the sale price, so it's best to flit around and keep things moving. Once you have a sizeable wodge of cash, it'll be time to upgrade to a new ship – your original craft doesn't have mounting points for many of the hardware upgrades you'll want to purchase. From there, you can choose the missions you wish to tackle, and slowly unravel the trail leading to the ultimate task – saving a planet from destruction.

SunBurst is fully desktop-compatible, in that you can switch from full screen gameplay to the desktop by pressing F12; although it's possible to pause the action anywhere in space, your game position can only be saved when safely docked at a station. Judging from the history file, *SunBurst* has been a long time in development, and this is both a blessing and a curse.

The good news is that the game will work on ARM250 systems (VOTI recommends that the extra graphical widgets are turned off to maintain the best possible speed), but the bad news is that the graphics aren't rendered at a wonderfully high resolution – crisper graphics would have made this game irresistible. Intentionally simpler and more fun than *Elite*, *SunBurst* still has a lot of depth and it marks a large step forward for VOTI in terms of the products they have to offer. An impressive game, and one that will keep you entertained for a good while.

Product details

Product:	Sunburst
Price:	£16.50 (cheques payable to N. A. Atkinson; please state whether you want DD or HD disc)
Supplier:	VOTI, Flat 7, 83 Bishopton Lane, Stockton, Co. Durham TS18 1PU
E-mail:	n.a.atkinson@durham.ac.uk
Web:	http://www.geocities.com/SiliconValley/Campus/3873/index.html

Free Ads

To submit a free ad to Acorn User, complete the coupon on page 70. 25 words maximum per ad.

In the September '98 issue a free ad selling Sibleius 7 was sent in stating the wrong contact telephone number. If you placed the ad (INCORRECT number: 01727-766252) please get in touch with AU editorial so we can correct it.

- For sale: Acorn Risc PC 600. RISC OS 3.60, 16-bit sound, 1Gb hard disc, 24Mb DRAM, 2Mb VRAM, 4 speed CD-ROM, Acorn AKF60 14in monitor, loads of software, new !Boot and latest Window Manager, etc. Only £600 ono. Phone Ian on 01388-762443 or e-mail ian.scott@zetnet.co.uk
- Wanted. Serial Card for connecting Modem to Serial Port for Acorn A3/4/5000. E-mail: gscott@argonet.co.uk or tel 01244-342806.
- 4-8Mb RAM upgrade for A310/410, £70. 1Mb VRAM, £20. PC Card for Risc PC SX33, £35. Acorn SCSI card, £50. USR 28.8 modem, £35. Tel: 0151-677 9585.
- A3010, 2Mb RAM, colour monitor, MIDI Interface and sound sampler. Good condition with games and software. Tel: Bedford 01234-271177 or 0467-347988. £135 ono.
- For sale: 2 x monitor (old style), 1 x A310, RISC OS 2, 1 Epson printer (LX100), 1 x keyboard, 2 x mouse and 1 x Econet module. Write to 4 Orchard Close, Bromham, Beds or e-mail: Luderfam@aol.com
- Sadly/reluctantly school changing platforms to PC! All Acorn models available: A3000s, A3010/20s, A4000s, A5000s, Risc PC 600, and software too! Telephone for lists 01924-373597.
- A5000, 8Mb, 200Mb HD, Taxan MV775 monitor, full manuals and software. Tel: 01924-373597 (Wakefield). £400 ono. Other models also available.
- Risc PC 600, twin slice, 26Mb, 400Mb HD, Sony Trinitron monitor, graphics tablet, Studio24Pro, Canon 1x-4015 scanner, Photodesk, Publisher, Internal Zip drive. £1000 ono. Tel: 01924-373597 (Wakefield).
- For sale: SCSI Morley uncached with PowerROM alsystem (4 Mar 97) - £85. Acorn C/C++ (with upgrade and free Archimedes Operating System), £110. Acorn Desktop Assembler (with free Assembly language programming), £80. Impression Publisher Plus V.5.10 version not keyhw (with free: First Impression, Border Disc and Outline Font), £128. Compression (new version), £16. AudioWorks (new version), £27. HardDisc Companion (Beebug), £25. ArcPCB (Silicon Vision), £24. PlayBack (Beebug), £18. Image Master + Twain (David Pilling), £17. SparkFS (David Pilling), £11. Risc User Magazine 88/89/90/91/92/93/94/95/96 (all numbers included binders), £90 (10 each). Archive Magazine Vol. 1/2/3/4/5/6/7/8/9 (all numbers inc. binders) £90 (10 each). Please note all price not include postage. E-mail: compare@dmw.it
- Acorn A3000, Acorn monitor and Citizen124D printer. All boxed with cables, mouse etc £300 ono. Contact Mr M Sykes at e-mail: mosykes@aol.com or tel: 01274-598901 after 6pm.
- Wanted: *File Handling For All* by David Spencer and Mike Williams, Publisher Beebug. *Archimedes Assembly Language* by Mike Ginns, Publisher Dabs Press. Tel: 01885-483638.
- Acorn A3010 with monitor. Various educational software and games. £90. Tel: 0161-368 7581 (Manchester).
- Risc PC 600, 420Mb HD, Cumana CD-ROM, 32Mb RAM, 1Mb VRAM, DX4-100 card, AKF60, 2+1 slices, 14.4Kbs Robotics modem, Win 95, DOS 7, PC Exchange, Sim City 2000, ArcTerm 7 plus more software. £950 ono. Tel: Russell 0181-948 3190 London.
- Bargain Acorn sell out. Impression Style, Spark FS, Logitech mouse, Olivetti printer, Virtual Golf, Flashback, Gods, Break147 & Superpool etc. All excellent condition. Phone for details 01926-450478.
- Birds of War £10; V. golf £10; Pr. Man. £8; Advance (used) £20; Q4G £5; CMaze £8; Flashback £15, COD Buyer Collects 01283-223035.
- A5000, 4Mb + 8Mb, ATAPI 6 x CD drive, IDEA Interface, AKF 18 monitor, j/stick. On HD, TextEase, ImpStyle, WordHound plus much more. Docs + manuals, loads of software + mags. £450 wtd. RPC Pref SA Price about £500. Tel: 01204-571836 Bolton, Lancs.
- StrongARM Risc PC, 17in monitor, 32Mb DRAM, 2Mb VRAM, 24 CD-ROM, 1Gb HD, 586 PC card. Win 95, SCSI II card, scanner, Ovation, Photodesk, Top Model, ArtWorks, PD discs, mags etc. £1600 ono. Tel: 01432-830266 Leominster.
- Risc PC 600, RISC OS 3.6, 24+1Mb, 3.2Gb HD, 486/33 PC card, CD-ROM, AKF60, speakers, lots of software, 190+ magazine discs, manuals, original boxes. £700. Tel: Graham 01582-615183 Luton.
- Sibelius 7 (v3.5) system: Risc PC, MidiMax, software synthesiser, speakers, 25Meg RAM, 1.2Gb HD, HP printer, DX4 PC card, PC Pro, CD-ROM, Win 95, Impression. Workstation, £1200. Also A4 portable, 4Meg/HD, case, software. £400. Tel: 01784-243529 (Staines).
- A5000, 4/160Mb, Multisync monitor, Epson LQ400 printer, lots of software and games. 200+ Acorn magazine discs. £300. Tel: 01895-469821 Middx.
- StrongARM Risc PC, 32Mb RAM, 2Mb VRAM, 1.2Gb HD, RISC OS 3.7, DX4-100 PC card, 12xCD-ROM, Taxan Multisync 770+LR monitor, original boxes, manual & software, PRM & magazines, £750. Tel: Chatham, Kent. Tel: 01634-868122.
- For sale: A3000, RISC OS 3.11, 4Mb RAM, 80K hard drive, manuals, software, including DTP, clip art, monitor, printer. £150 ono. Tel: Mr Wilson on 01425-279 7474 (Christchurch area, Dorset).
- A5000 RISC OS 3.1, 4Mb RAM, 200Mb HD, Taxan 795 monitor, hand scanner, Canon LBP4-Plus LaserDirect with cassette tray. Publisher, ArtWorks, Games, loads more software. Manuals, VGC, bargain at £500 ono. Tel: 01905-351386 or e-mail: T1MO@hotmail.com
- Archimedes 410 (RISC OS 3.10), 30Mb IDE hard drive, Taxan Multiscan 775 with lots of software. Tel: Keith 01409-281869.
- StrongARM Risc PC, 48Mb, 1.5Gb, DX4-100 PC card, radio podule, 33.6 modem, CD-ROM, best software (Publisher, ArtWorks, Java, Browse, ANT Suite etc). £900. Tel: 0181-349 4877 London.
- Archimedes A3000 computer upgraded to max. memory. RISC OS 3 operating system. Internal hard drive, Philips colour monitor and Panasonic printer. Reasonable offers considered. Lowton area near Warrington. Tel: 01942-742021.
- Risc PC 600, 40Mb RAM, 200Mb H/D & 1Gb SCSI H/D, SCSI 2 Card, PC Card, MIDI Card (inc Sibelius 6), Caddy CD-ROM, + loads more £1400 ono. Call 01425-611193.
- AKF60 14in Multiscan colour monitor, 0.28dp. Excellent condition. Original box and user guide. £100. Tel: 01257-422302 (Wigan, Lancs).
- Risc PC 700, 9Mb RAM, 425Mb HD, AKF60 monitor, CD-ROM, Advance, games, excellent condition. £475 ono. Tel: 01746-710205 (Wolverhampton, W Midlands).
- A7000, RISC OS 3.6, 4Mb, 425HD computer plus monitor, manuals. £500. Tel: Nottingham 0115-974 3466 evenings.
- A5000, OS 3.1, 2 x 1Gb HD, 4Mb RAM, AKF18 monitor. All user manuals. £550 ono. Tel: 01983-740597, Isle of Wight.
- Eight A3000s for sale — each with Acorn colour monitor, 4Mb RAM, RISC OS 3.1 & Nexus network card, excellent condition. With Nexus server & all cables, as network, £1260. Separately £150 ono each A3000 (with monitor). Cannot deliver. Tel: Michael on 01953-681684 (Suffolk) after 6pm.
- Software & hardware for sale. Canon BJC800 Turbo drivers, £25. SolidCAD, £20. PC Emulator with full Dr-DOS user guide, £15. Genesis Plus, £10. Tabs 3D modelling package, £20. Desktop Publisher, £8. Four SCSI interfaces for A3000/A3020, £40 each. Loads of 25-way D to 25-way D cables to link SCSI interfaces etc & eight A3000 1 & 2Mb RAM cards. Tel: Michael on 01953-681684 (Suffolk). All prices negotiable.
- Acorn A4 laptop, LCD grey, 4Mb RAM, 130Mb hard disc, power supply, £300 including postage. A3010, 4Mb RAM, 80Mb hard disc, VGC. £150. AKF52 colour monitor, £110. Tel: 01706-817570.

Dave Acton and **Dave Lawrence** play the tables and take a chance

star info

Nudge nudge, wink wink

Author: Owain Cole

We've featured an iconbar fruit machine before in *info, but the clever thing about **Owain Cole's** version is that you can make it roll by 'pulling' the mouse down in a sort of pulling-the-handle type fashion. This happens no matter what you are doing in the desktop – merely scrolling a filer window can now cost you 10p! If you get a match in the first two symbols, you win 35p; if all three are the same you win 70p. If this is not enough of a fix for the hardened gamblers among you, clicking on the icon will also spin those wheels.

Owain's choice of 'fruit' may seem a little odd, (as far as we can tell you can have a mexican bolas, bell, diamond and an upside down traffic light), but I'm sure there's a rational explanation. As Owain points out, you can just keep it running all the time while you work and the natural action of mousing about should keep the game going. Any further offerings in the games-you-don't-realise-your-playing genre gratefully received! *Dang, I'm 55p down now – Ed.*

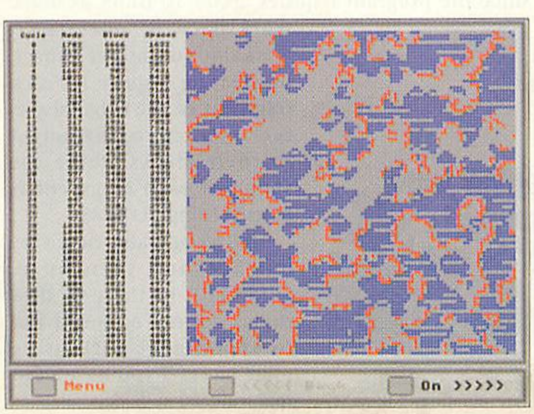


The survival of the crunchiest

Author: Colin Kennedy

Another foray into the realms of computer-simulated evolution now. **Colin Kennedy** transports us into the red-eat-blue world of the crunchers and munchers with *Crumunch.*

"Imagine an area of land in which there are prey (blue) which live on vegetation, predators (red), which live on the prey, and empty grassy spaces (grey). Prey and predators are bi-sexual [*Actually, I think the term is hermaphrodite, but we can now tick off 'bi-sexual' on our list of words we thought we'd never be able to use in *info – Ed*] and breeding does not occur for lone animals."



The life cycles of the red crunchers and the blue munchers take place in a 100x100 wrap-around world. In other words, the creatures are living on the surface of a doughnut. *And if you've been in our local cake shop, you'll know there's a lot more going on on the surface of the doughnuts than a sprinkling of icing sugar I can tell you – Ed*

You have a fair amount of control over the behaviour and needs of the red and blue populations, although to get you started, you can just select some default parameters and watch evolution in progress. Up to 48 cycles are acted out, although you can stop the action at any stage and see a graph of the populations over time.

After a while, things settle down in the world of crunchers and munchers, with herds of munchers happily grazing and packs of crunchers lurking on the edge of those herds, picking off their prey. Trying experimenting with the parameters to see the effect – you can control how densely grouped creatures must be to breed, and also how likely they are to die of natural causes.

Currently, the program chugs along at a moderate pace on a Risc PC, but an ARM-code or C version would be nice to show more long term evolutionary trends. Anyone fancy doing the conversion?

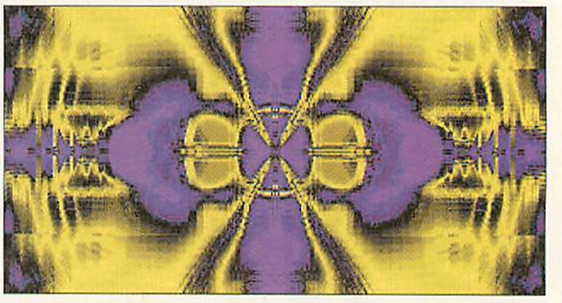
A kRO-mATIK for the people

Author: Philip Mellor

And the award for most difficult-to-type program name of the month goes to... **Philip Mellor** for kRO-mATIK.

"Another crazy C-compiled concoction. It produces a rather funky kaleidoscopic display using a combination of OS plotting (lines and circles in various ANDs, EORs and ECFs) and smudging techniques. It reminds me a little of an old Dr Who opening sequence [*Don't get us started on that one – we're still getting entries for the Tunnel Challenge – Ed*]. You can choose from a range of different colour palettes. I recommend the yellow/blue and green/pink, and four different screen sizes are offered to suit your processor."

Philip's C source code is included on the disc, should you wish to tinker or merely admire.



How do you eat yours?

Author: Justin Fletcher

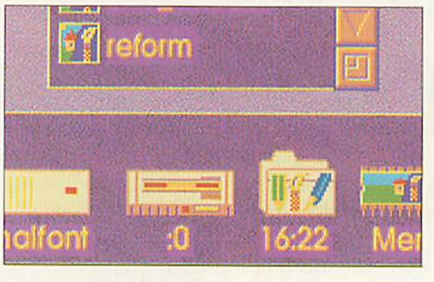
Well, we published a program called *Galaxy* some time ago, with the usual chocolate puns abounding. So it was only a matter of time before this *Dairy Milk* inspired desktop came along. **Justin Fletcher** is to blame. "Have you ever wondered what would happen if Cadbury and not Microsoft ruled the computing industry?" he asks. Well, simply run *!Purple* to find out. Justin has amended the standard desktop in the following ways:

I've replaced the tile_1-8 sprite with a purple one.

I've replaced the standard palette with a purple-yellow scale one.

The tools have been inverted so that they appear to be shaded from the top left again.

All NEW windows will be created with purple text titles on yellow tools. Menus have the same effect applied to them.



The backdrop is changed to be a light purple. I would have liked a chocolate backdrop, but all the browns I create are... yuck.

Justin points out that you may have to refresh the desktop to see the full effect (press F12 then Return). The source code for the patch is included on the disc with details. The patching is done using Justin's famed *JFSPatch* utility, and Andrew Clover's freeware *WimpWIVe* is also required. This module provides a simple way to filter wimp calls other than Wimp_Poll, which makes this sort of thing much easier.

Symbol-minded

Author: Jan Vibe

Mandala, The Chambers Dictionary (1998) defines as "...a pictorial symbol of the universe...used as an aid to meditation." It is also the name of the first offering in **Jan Vibe's** latest collection.

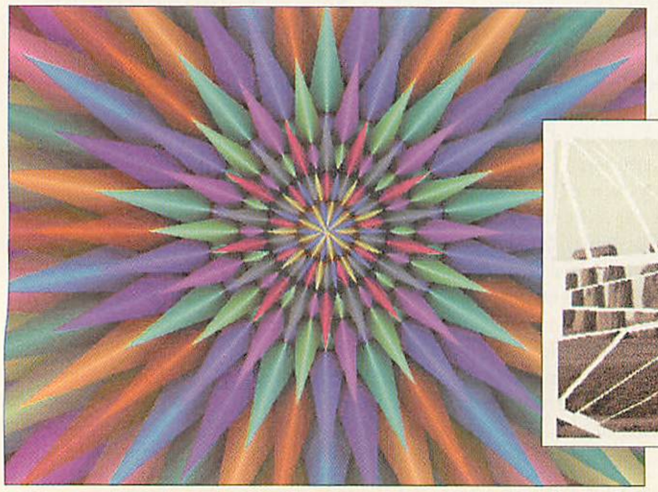
Running in Mode 21, *Mandala* creates an interesting 256-colour image, emanating from the centre of the screen, upon which you may meditate at your leisure. Curiously, this is not the first time mandalas have been linked to *info. Some time ago we featured an item from legendary Acorn programmer Tim Tyler, whose web page it at none other than *www.mandala.co.uk*. There you can not only find all you need to know about mandalas, but also Tim's collection of RISC OS software.

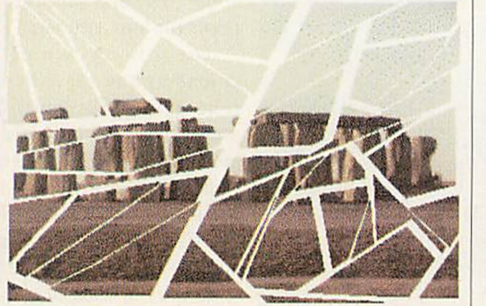
So, if you're feeling suitably at one with the universe, perhaps now is the time to blow up a sacred ancient monument or two. (Let it never be said that *info is without contrast.)

Shatter takes a sprite and simply shatters it into many pieces which fly out from the centre of the screen. We published its predecessor some time ago. Just enter the name of a sprite file (one of Stonehenge is provided) and let the program do the rest.

Two versions are provided – *Shatter* runs in Mode 31 and *Shatter2* in Mode 20. You will need to ensure that the original sprite is not too big, since the program requires about 10 times as much workspace to operate. It works as you might expect, by creating a sprite for each fragment of the original picture, and redirecting output to their masks where the shape of each fragment is plotted using PLOT 85.

Shatter actually runs very quickly, and there is an INKEY(10) in there to slow things down. You might like to experiment with using more pieces if you have a fast machine.





Logo-a-go-go

Author: Dave & Dave

To keep you inspired for our *info logo competition (if you missed the October issue, the challenge is to create an animated *info logo that lasts no longer that **two** seconds - like the ITV station ID's before the adverts), here's one we made earlier.

InfoLogoE is *not* the fifth in series of attempts. The E suffix is entirely spurious, merely following the original program's *D* designation. Perhaps it's a Star Trek thing. Who knows. Sorry, I digress. The program takes the five letters of '*INFO' [*Since when was * a letter? - Ed*] [*Don't be so picky! - Ed#2*] and makes them zoom out of the screen in glorious 3D-o-vision. To produce the nice chunky rounded lines (rather than dull skeletons), the *Draw* module is wheeled into action.

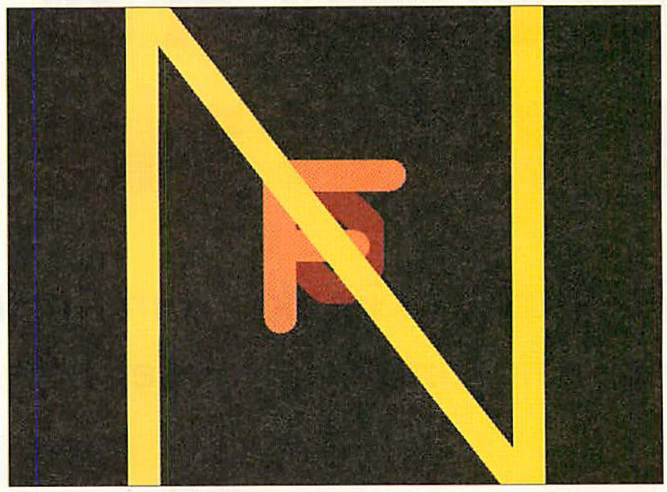
This seemingly daunting module is actually very easy to use. The SWI call *Draw_Stroke* can take up to seven parameters, but only three are used in this example.

R0 = pointer to path block
R1 = fill style or 0 for default.
R2 = pointer to transformation matrix, or 0 for default
R3 = flatness, or 0 for default
R4 = line thickness, or 0 for default
R5 = pointer to join/cap block, or 0 if none
R6 = pointer to dashing pattern, or 0 if none

The path block contains a list of 'instructions' for drawing the path. The path can be made up from any number of moves, lines and curves - obviously anything that the *!Draw* application can do, the draw module can render! Co-ordinates are stored in fixed point notation, with 8 bits of precision. In other words one screen unit is 256 draw units.

No curves are used in the *info logo (the 0 is squared off), so only moves and lines are needed. The code for move is 2 and for line is 8. The co-ordinates are read from data statements at the end of the program and the appropriate 2 or 8 added to the path block. It is important to remember to terminate the path, hence the cunning addition of a 0 at the end. If this is forgotten, the draw module is quite happy to troll through memory trying to draw whatever it can find! In most cases though, the memory will contain rubbish and you'll be presented with a baffling error message.

As we want a thick line, R4 is used. Again, draw units need to be specified. No perspective is applied to the thickness of the lines, hence the constant 256 * 64. If you want a fun effect, try changing this to 256 * z0!



Finally, as we have requested a thick line, we also need to specify the line join and cap styles. These are passed in in a 16-byte block. We only need a fairly simple description, so only the first part of this block is used.

Byte 0 contains the join style, 0 for mitred, 1 for round (what we want), and 2 for bevelled. Bytes 1 and 2 contain the end and start caps respectively. These are 0 for Butt, 1 for round (again, what we use), 2 for square and 3 for triangle. If you use *!Draw*, all these terms should be familiar to you. We hope to cover more details of the draw module in a later issue.

By careful tweaking of the speed of zoom, the demo lasts just under 2 seconds on a Strong ARM. Phew!

The deadline for entries was originally October 30th but as always we're very flexible, so you still have some time left if you want to put in a late entry to the challenge. As always, if we get a particularly good response, we'll spread the best over a couple of issues for your viewing pleasure. *Over £1.50! I'm going to retire! - Ed*

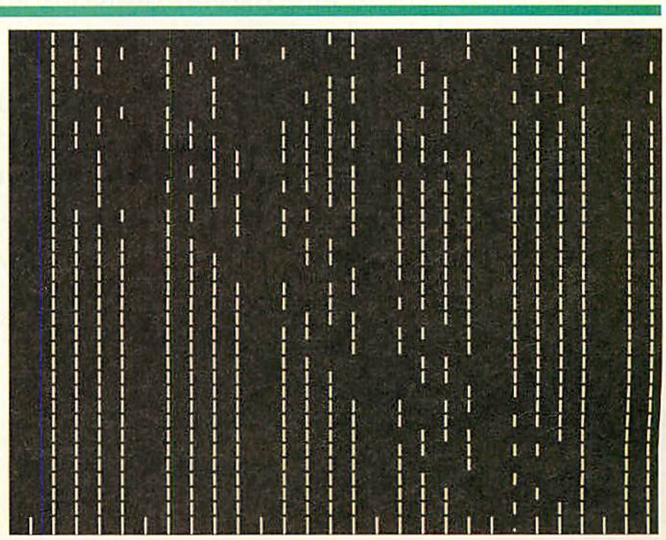
Ant attack II

Author: A Grace

Back in September '97 we carried a version of the famous Turing ant by Jean van Mourik. We now make a welcome return to the subject of formic automata with a program called *Langtant* by **A Grace**. We're not sure what the A stands for, although we're assuming it's Anthony or Anton.

The name of the program comes from Chris Langton, who came up with the Vant (or Virtual *Ant*) rule. Basically, the Vant begins facing a particular way. If it is on a non-white square, it turns the square black, rotates 90 degrees clockwise and moves one pixel on; if it is on a black square, it turns it white, rotates 90 degrees anti-clockwise and moves on. And that's about it really. The fascination comes from the complex patterns built up by such a simple creature following such a simple way of life.

Mr Grace's version runs in either Mode 25 or 29 and allows you to set up the Vant's environment before setting it free. Use Select and Adjust to change the initial colour of pixels and then Menu to place the Vant. A grid can be used to help your design, and the author suggest containing the Vant in a 'cage' of lines before release.



Reader Offer

Give your children a headstart with the Greeks at an unbeatable price



Get Ancient Greeks from Anglia for only £30 inc. VAT with this fantastic reader offer from Acorn User

SAVE 25%



Ancient Greeks is an engaging introduction to the history of Greece and its importance in World History. From the moment the Oracle appears and implores you to restore her ruined city you are drawn into a series of exciting activities. The city can only be rebuilt if tasks are completed in each of the ruined buildings.

Ancient Greeks is an entertaining and enjoyable way for your child to learn while developing key skills. The interactive activities are designed to provide information about ancient Greece as well as encouraging the development of information gathering and processing skills. Plus key elements of the History curriculum are addressed including interpretation, organisation and communication.

Getting hold of your copy of Ancient Greeks couldn't be easier, simply fill in the coupon below and send it complete with payment (including £1.99 postage and packaging) to:
Ancient Greeks Offer, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP

YES! Please send me a copy of **Anglia's Ancient Greeks** for only **£30** inc VAT plus £1.99 P&P

Surname (Mr/Mrs/Ms/Miss) ....

First Name ....

Address ....

.... Postcode ....

Telephone ....

I wish to pay by:

❒ Cheque/postal order made (payable to Tau Press)

❒ Credit card (Visa/Access/BarclayCard/Mastercard)

Card Number ❒❒❒❒ ❒❒❒❒ ❒❒❒❒ ❒❒❒❒

Expiry date ....../...... Signature ....

Send your completed forms to:
Ancient Greeks Offer, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP

❒ Please tick if you do not wish to receive promotional information from other companies

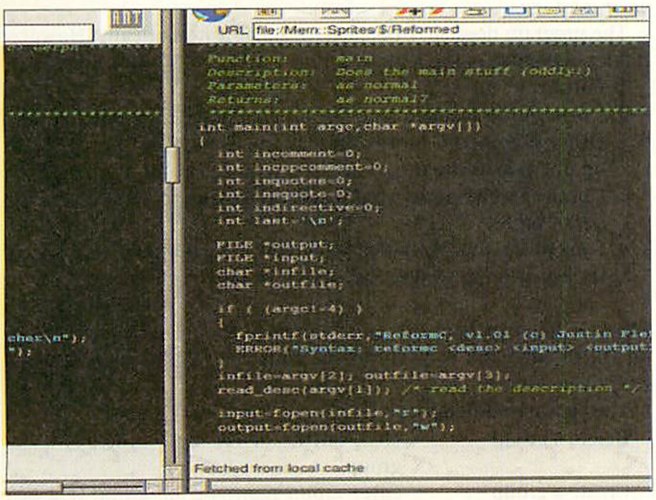
Reform centre

Author: Justin Fletcher

Justin Fletcher's non purple program this month is a short utility to re-format C source code. It is *not* intended for use on code you wish to work on – it isn't a version of *beautify* – instead it re-formats the text so that it is suitable for documentation purposes. Justin says it was originally written to produce Impression DDF format, but with the cunning additional of 'description' files it can now produce HTML, RTF, Strong Help and even direct to Epson printer codes.

The main portion of the program parses the C source code and recognizes the following elements: C style comments, C++ style comments, strings, characters, directives. Using the rules laid out in the description files these elements are then output sandwiched between a 'pre' and a 'post' string. For example, you might want all comments to be italic, so the pre-string for comment would be the code for italic on and the post-string would be italic off. The available tags are:

directive_pre	Placed before any directive
directive_post	Placed after any directive
string_pre	Placed before any string
string_post	Placed after any string
char_pre	Placed before any character literal
char_post	Placed after any character literal
comment_pre	Placed before any comment
comment_post	Placed after any comment
cppcomment_pre	Placed before any C++ comment
cppcomment_post	Placed after any C++ comment
escapes	The characters which need to be escaped
escape <number>	What character <number> of the escape characters should be
line_pre	Placed at the start of all lines
line_post	Placed at the end of all lines, before the newline
doc_pre	Placed at the start of the document
doc_post	Placed at the end of the document



You can include a range of useful control characters in your strings:

\\	\
\"	"
\b	code 8 (backspace)
\f	code 12 (form feed)
\e	code 27 (escape)
\t	code 9 (tab)
\n	code 10 (newline)
\0	code 0 (NUL)
\x##	code ## in hex

A number of description files are supplied as examples on the disc. To run the converter, make sure it is copied somewhere in your run path and use the command:

```
*ReformC <desc> <infile> <outfile>
```

You might even like to modify your project 'Make' files to generate formatted output automatically. Justin has supplied the source code for *ReformC* which he believes is portable enough to be compiled on other systems. *Wh-hoo! 35p! – Ed*

Waterworld

Author: Thomas Madams

Impressed by Mark Adcock's *WibbleLine* (October 97 issue) regular **Thomas Madams** was prompted to start word on an ARM code routine that would "simulate a rubber sheet instead of a rubber cord." The product of his efforts is *Water*.

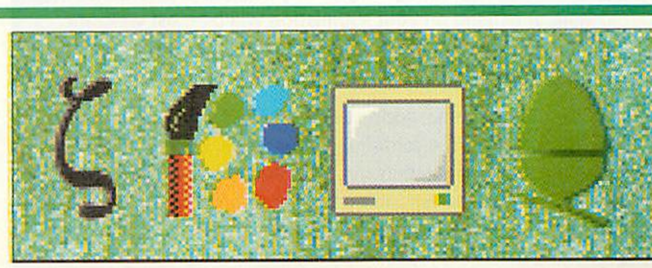
"Although the resulting program was not exactly what I wanted, it did end up looking fairly liquid. After a little bit of tinkering, I got a half decent, 'finger dragging through a pond full of water' effect. Just hold down a mouse button, swirl your mouse around and enjoy the resulting ripples."

Forest fire

Author: Ryan Li

]If you enjoyed **Ryan Li's** new desktop colour schemes from the June issue, here are six more from him to tickle your retinas: *Acorn*, *Candy*, *Fire*, *Forest*, *Rock* and *Swamp*. Each new scheme comprises a palette file and a window background tile (tile_1-8 – rename as tile_1-16 or tile_1-32 if you use a 32k or 16m colour mode for your desktop).

Ryan ends by saying, "Please encourage readers to design window tools, icons etc to match my colour schemes". So consider yourselves severely encouraged.



The right chemistry

Author: Adam Granger

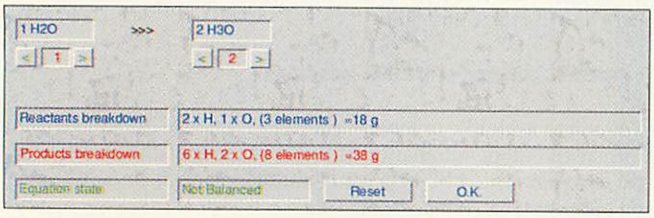
We return to a favourite subject of *info contributors past – the dear old periodic table. **Adam Granger** of Huddersfield addresses all matters chemical with an application that will not only tell you about the elements but will also let you perform calculations involving them.

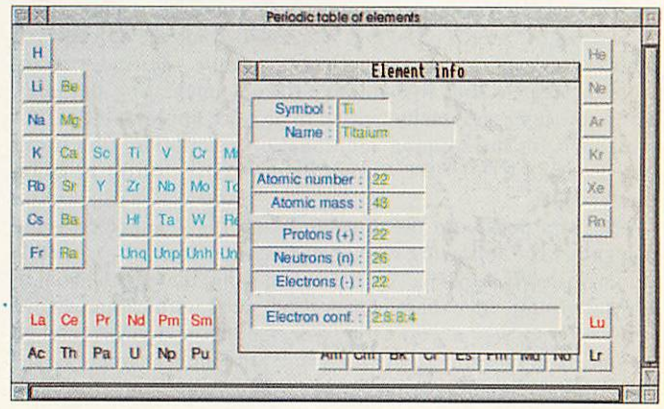
Once installed, click on the flask to open the window showing the periodic table. Click on any element to find out more about it – a key is provided to show the groups: alkali metals, noble gases and so on.

The equation window can be opened from the iconbar menu. This provides two writable icons – one for each side of the equation, and a group of buttons to help get your chemical sums to balance. From left to right, these are:

Add chemical –	adds a compound to where the cursor is, from a editable database
Balance equation –	makes balancing equations easy
Molar mass –	calculates the molar mass of compounds in the formula, also shows working out
Element break down –	shows a break down of the number of elements on each side of the equation
Percentage composition –	calculates percentage of an element/compound in another compound
Compound database –	allows access to the compound database, creates new groups etc.
Name compound –	enter an ionic compound, press return and its formula should be given

"Formulae are entered as written, so glucose would be entered as *C6H12O6* and 6 moles of glucose would be entered as *6C6H12O6*.





Brackets may be used as expected, so calcium hydroxide would be entered as *Ca(OH)2*. The mole values can only be entered as whole values since the program is based on integer variables and any error (e.g. the entry of nonexistent elements) will return an error message.

The program does NOT balance formulae automatically. However it does make balancing a lot easier:

1. Enter your formula
2. Click on the balance icon – if an error appears about elements either side then it means there is one element (or more) that is on one side of the equation but not on the other.
3. Use the arrows underneath each compound to adjust the number of moles
4. Look at the data provided – element breakdown of each side of the equation as well as the equation state.

Click on Reset to reset the mole values to their original settings or on OK to enter the values into the equation in the main equation window.

The compound database offers many options:

Delete a group –	click on the delete icon underneath the group
Create a group –	enter group name in the group text box and click on the create icon
Change group –	pop up the menu and click on new group
Add a compound –	click on the add icon enter name and press Return
Delete a compound –	select compound and click on the delete icon
* Save –	click on the save icon
Change compound –	pop up the menu click and select new compound
Edit compound name/formula –	click on old text, edit and press Return to save

Ion charges are located in two files: *Anions* (nonmetals) and *Cations* (metals). These are within the *!Chemistry* directory and can be edited directly with Zap, Edit etc. The format is:

NAME IN CAPITALS # Formula @ charge (no plus or minus!)

The program will not need reloading after this, since the file is referred to each time. Element data are stored in the file *!Chemistry.ChemData* which can also be edited easily. The elements are ordered in groups going from left to right on the periodic table and the format is:

x ! y @ Symbol # Name $ Atomic mass % Atomic No

where x, y indicate position relative to hydrogen. We don't suppose the file will need to be updated too often though!

*QUIT

All things Acorn – progs, apps, hints, tips, this (and a little bit of that too) to our usual abode please:

***INFO, *Acorn User*,**
Tau Press, Media House, Adlington Park,
Macclesfield SK10 4NP

or, e-mail us (including your real address please) at:
starinfo@acornuser.com

Please keep e-mails under 100k – or let us know before you intend sending something longer! Any additional information to explain or expand on your submission will be most welcome. Cover-disc space is very limited, so can't include vast apps, adventure games or tracker files, however wonderful.

Please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. An SAE will ensure your discs are returned. If you are responding to one of our challenges, please mark your envelope accordingly.

Spacetech Ltd

The Courtyard, Southwell Business Park, Portland, Dorset, DT5 2JS, U.K.
Telephone: +44 (0)1305 822753 Fax: +44 (0)1305 860483
Email: sales@spacetech.co.uk Web : http://www.spacetech.co.uk

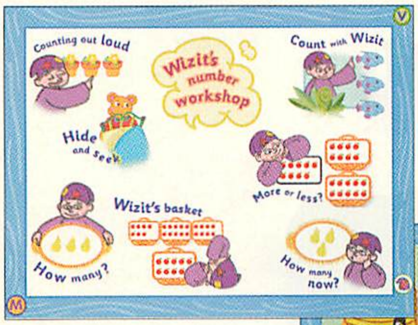
Know your numbers

SHERSTON (01666 843200) have launched a new version of an old favourite, ***Animated Number***. To count properly children have to know the number names in the correct order, be able to say one number word for every object they want to count, separate out the objects they have counted from the objects still left to count, stop counting when they reach the last object, and understand that the last number name they said is the number of objects. Numeracy is under scrutiny at present with the National Numeracy Project promising a Numeracy Hour in September 1999 along the same lines as the Literacy Hour introduced this year.

Originally published for the BBC Micro in 1989, ***Animated Number*** has sold over 18,000 copies and is used in the majority of schools in the UK. The new version, called the ***123-CD***, has been designed to help young children get to grips with the very beginnings of number.

The CD features a friendly character called Wizit, who guides children through eleven different early number activities. In ***Wizit's Number Workshop*** there are seven activities dealing with learning number names, enumeration, cardination and conservation of number. Meanwhile in ***Wizit's Number Fun*** there are four activities; two talking rhymes to introduce numbers and number names and two simple number games to consolidate children's learning.

In designing the all new 123-CD, Sherston have started from scratch. Sherston's Chairman and Educational Director, Bill Bonham, commented, "When we published the original program for the BBC Micro no one had even heard of multimedia CD-ROMs. So, when we decided to update the program we really had to start all over again to take advantage of the speech, animation and interactivity that CD multimedia offers." The cost is £29.95.





Into cyberspace

IF you've missed the phrase, 'education portal' then let me introduce you to a new buzz word about to hit the education and Internet fraternity in full force. They are a growing number of companies – big and small – which want to be your first port of call when it comes to research, resources or lesson plans on the Internet. Argosphere is one such company and with no subscription fee and growing UK-based content it has a lot going for it. Mike Matson has had editorial control over the last year but is now moving on to pastures new. His position is being taken up by Simon Hosler, he of ***Crystal Rainforest*** fame.


Simon Hosler

Simon gave up teaching in 1985 to concentrate on software development and to date has 26 products to his name, winning six Educational Computing and Technology Awards since 1990. "I am always looking for new challenges and was delighted to be asked by Ian Goodall to take over the design and development of Argosphere. The site has already earned a tremendous reputation, but the potential is far greater." If you've not visited Argosphere you can do so on: www.argosphere.com

Istanbul or bust

ANGLIA Interactive's first Internet event went into action at the end of September – http://www.angliainteractive.com. Available to non-subscribers as well as subscribers, participating schools made e-mail contact with Robert College in Istanbul. Commenting on their first Internet project at Christchurch School near Oldham, ICT Coordinator, Shelley Birchenough said: "This fitted really well with our project on Places, although I found some of the children discussing football more than anything else. The children's appetite has been well and truly whetted by the e-mail contacts and exchange of photos. It has left them wanting more, live links and preferably video rather than just e-mail."

Where there any lessons her school had learnt from this? "As always the more preparation you can do the more everyone gets from the exercise and we found the Web pages on Istanbul quite useful for setting the scene. We downloaded these so there was no access problem, but my Year 6s in particular wanted to follow links and go off on their own trails and this sort of activity is really only feasible on a dedicated line and ours isn't installed until next month."

We're still standing

SINCE the astonishing move by Acorn's Stan Bolland to discontinue its Risc PC 2 project, Xemplar (01223 724724) have gone out if its way to reassure the education community that it will continue to supply and support Acorn desktops. Commenting on the decision, Xemplar MD, Brendon O'Sullivan remarked: "The Risc PC 2 decision does not affect Xemplar as it was never intended for the schools market.

Xemplar has long supplied educational solutions on all school platforms and will continue to do so." However, he went on to add: "Acorn schools will continue to be catered for in Xemplar's future development of educational ICT. Matrix NC, for example, fully supporting Acorn connectivity and/or platform migration." It appears that Xemplar, for one, is putting more emphasis on the future of the thin-client architecture of the network computer.

They've moved

YITM and SEMERC, now under the Granada Learning banner since their takeover some months ago, have now moved premises. You can find them at Granada Learning, Quay Street, Manchester M60 9EA or on 0161-827 2927 or e-mail: info granada-learning.com

New solutions

FROM the beginning of October Sherston (01666 843200) have introduced two new initiatives aimed at busy teachers everywhere. Firstly they have revised their policy for extra copies of CD-ROMs – a new CD Pack containing three CD-ROMs, for schools who want to use the same software on three different computers, has been introduced and is available for just one and a half times the Single User price.

The existing five CD pack solution will continue at the current catalogue prices. "Once again, Sherston have listened to their customers and produced a valuable service that other educational software publishers will have to follow. The three CD multi-pack is great value and the perfect solution for schools where multimedia resources (and budgets!) may be limited." commented one customer – Christopher Price, ICT Co-ordinator for Merton Court School, Sidcup, Kent.

Contacting me

You can contact the Education page by writing to me, Pam Turnbull at *Acorn User*, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP or e-mail: educ@acornuser.com

Language made fun

Pam Turnbull looks at a program just made for the Literacy Hour

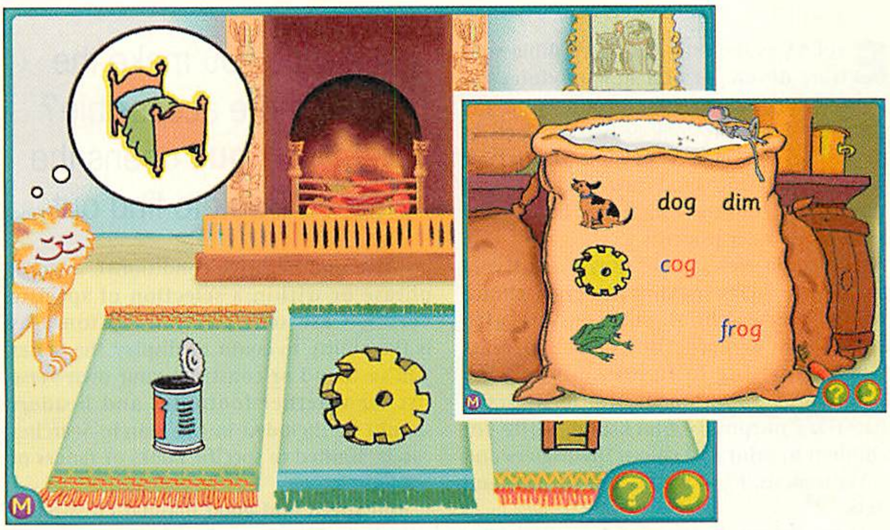
BASED on the Rhyme and Analogy strand of the Oxford Reading Tree reading scheme, this software – with the snappy title of *Rhyme and Analogy Activity Software Volume A* – has been designed to provide structured activities to develop children's phonological awareness, particularly of rhyme and is based on Professor Usha Goswami's research which shows that a child's awareness of sounds in spoken words is a crucial foundation for learning to read and spell. The software works best if you are using the Reading Scheme though the activities do stand on their own.

Volume A will – a second volume coming online early in 1999 – consists of 18 activities based around six books and combining colourful graphics, speech, animation and sound effects covering the 48 rhyme families covered in the reading scheme. The books on offer are: Supersonic Engine Juice; Scat, Cat; The Mungle Flap; Bad Day, Good Day; Who Wants to Play with a Troll? and The Spell Shell.

The aim of this program is to use rhyme and alliteration to nurture an awareness of phonemes, using the concepts of rimes and onset, while using analogy in a rhyming group to create new words with the same rime, bit, sit and so on. It does this be providing three types of activity for each book designed to practise listening, identify rhyming words by their sound and by how they look on paper or screen.

The first games in each book involves listening – Sherston have taken care to screen out shared phonemes – before moving on to reading and recognition skills and finally reading and writing. Progression comes from the phonics used and the complexity of the games.

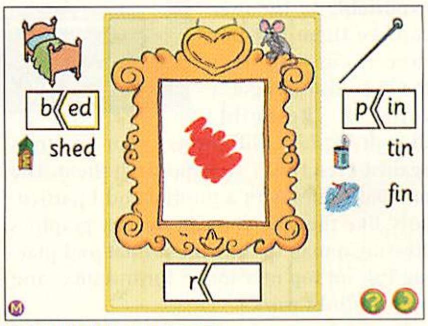
Sometimes the graphics are a little hard



to distinguish and we had a huge discussion over *hut* which some of the class wanted to call a shed. I noted later that this was commented on in the manual but we had already discovered that the Help button names all the items so there can be no arguments.

Each child is logged on individually and you can specify which books and activities are available to them. In addition you can also allow children to repeat activities. The ability to alter the colours of the onset and rime which are highlighted in some activities is useful if there are children in the class with vision problems. A record is kept of all the completed activities.

Different books provide different activities and concentrate on different rhyme families using the words and images from that book. Listening activities vary from choosing which picture rhymes with another to a sort of I-spy where you must find a object which rhymes with a specific word in the scene in front of you.





Reading and Recognition activities may provide five pictures accompanied by their words with the child deciding on the two sets which rhyme, or matching the three rhyming words from a choice of six with pictures for clues and reinforcement. Alternatively there's a rhyming word search grid with a series of pictures to help in the hunt.

Finally reading and writing is practised on a screen with two words appearing as text and pictures. A new picture appears in the middle with the onset but no rime, the child must then decide which rhyme family this belongs to. A variation on this comes in The Mungle Flap where onsets and rimes are separated. These are in the same rhyme family so children have to replace the onset and click on the picture it represents.

Not the most exciting package for the classroom but this is a very specific package which is useful and relevant.

Product details

Product:	Rhyme and Analogy Activity Software Volume A
Supplier:	Sherston Software, Angel House, High Street, Sherston, Malmesbury, Wilts SN16 0LH
Tel:	01666 840433
Fax:	01666 840048
Ages:	5-7
Price:	£40
Web:	www.sherston.com

It came upon a midnight clear

How do you make the Bible more accessible? **Pam Turnbull** opens the Good Book to find out

ExpLAN is the only UK-based Bible software developer and new modules are being added to the base products all the time, but I want to look at two products in particular, the *Good News Bible StarterPack* which is well suited to Primary schools, and the *ResBuild* utility which can be used by teachers or older students.

The Good News Bible uses a relatively small vocabulary making it a good choice for primary school children. It also allows you to keep the correct formats when exporting to Impression and the 100+ Annie Vallotton illustrations (drawfiles) are purposely black and white for children to print and colour themselves and cover Genesis, Exodus, the four Gospels and Acts.

Open the application and you'll find a range of tools at your disposal. Click on the book icon to make your choice which is then displayed at the bottom of the screen with the chapter, page and verse details which can be moved on/back with the arrows. Highlight a verse and watch out for footnotes or images via the resources icon or for links. The Notes option I found useful, linked to one verse they may give pointers and can be edited to give younger users extra guidance.

The starter pack also contains a timeline of Biblical history, commentary and graphics on early Jewish temple worship, plus quizzes. But good search tools are necessary for any age of user and the GNB offers comprehensive facilities.

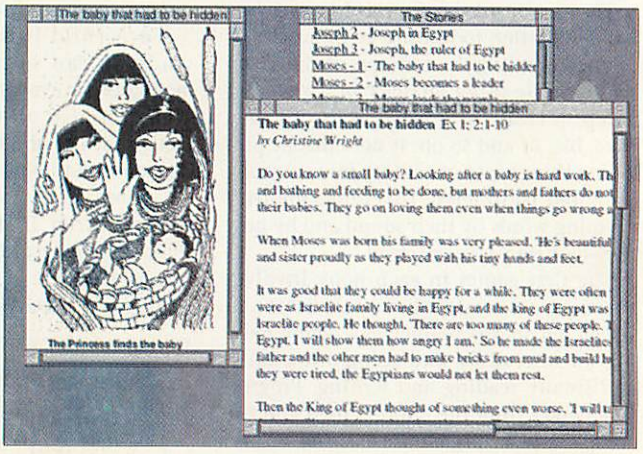
You can search for an expression (with positive and negative conditions), a word, phrase or within a selection of specific verses. Case sensitivity is optional as is the ability to count or display the verses you've found or construct your own verse list, or whether footnotes and headers should be included in the search. Searches can be limited to specific books or ranges of books.

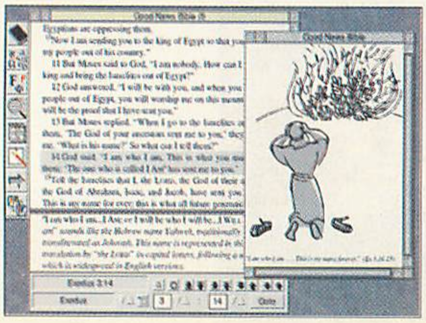
Add speed and good manual cross-referencing to this comprehensive resource and though there are no graphical bells and whistles, this is an intelligent and very adaptable product.

Do it yourself

ResBuild is a resource builder which creates multimedia directories which you can use with *!HolyBible*, the contents of which appear when the relevant flagged passages appear on screen.

Creation is very straightforward, also images and so on can be marked as non-exportable so the user can see them but not save them — unless the user also has got a copy of ResBuild, though ExpLAN will protect your resources against even this if you approach them. The manual comes with a tutorial and I particularly like the way you can overlay graphics creating a map in drawfile format and placing this on top of a sprite, for instance, and how hotlinks work.





Easton's Bible Dictionary

Produced by the Christian Acorn User Group, this dictionary is now in its second edition as a !HolyBible module. This classic reference work contains more than 4,000 items has been extensively revised by CAUG member, Brian Scott, and now includes over 30,000 hotlinks and all items now auto-linked to more than 20,000 Bible passages.

In addition, StoryTime has been compiled by Rev Colin Randall (using ResBuild) from material originally published by the Scripture Union. Like the GNB pack, the illustrations are deliberately black and white so they can be coloured in. The reading age of the stories is around 6-9 years. There are careware products available from the: Christian Acorn User Group, Rev Colin Randall, The Rectory, Swan Lane, Long Hanborough, Witney, Oxon OX8 8BT.

Lion Electronic Reference Library

Lion Publishing's Handbook to the Bible and Handbook of Christian Belief have been bestsellers since 1973 and now the same resources available as an add-on module for *!HolyBible* which contains 4,500 words of text, maps, timelines and photographic items linked to each other and to the Bible-text. In addition, ExpLAN have added 2,500 Bible references and over 1,200 hotlinks.

Each Bible passage displays relevant commentary material with links to a dictionary and background articles on history, geography, theology and beliefs. People and places mentioned in the Bible are keyed to specific timelines and maps where the name is highlighted with an auto-locator box. All for £45 from ExpLAN.

Product details

Product:	GNB Primary Starter Pack
Ages:	5-11
Price:	£99 (if you already have the !HolyBible Base Pack you can buy a GNB add-on module for £45)
Product:	Resource Builder
Price:	£38 (requires !HolyBible software at £70 for Base Pack)
Supplier:	ExpLAN Computers Ltd., P.O. Box 32, Tavistock, Devon, PL19 8YU
Tel:	01822 613868
Fax:	01822 610868
E-mail:	explan@explan.demon.co.uk
Web:	www.explan.demon.co.uk/

Beware of aliens

Jo Giles takes a look at a package which supports a TV programme on reading skills with maths and logic thrown in too

LOGOTRON have been supporting the Look and Read TV series' for a number of years with Earthwarp, Through the Dragon's Eye, Sky Hunter and Spywatch. Latest to join the family is *The Legend of the Lost Keys* and rather than merely repeating the TV series the computer program looks at a variety of literacy skills from word endings, to rhymes to soft and hard 'g' sounds.

Although children will get most from this if you use in conjunction with the Look and Read programme, this does stand on its own. Taking a leaf from a book on the X-Files, children find themselves outside the house of eccentric Great Uncle George who has a secret to impart. It appears that an alien invasion is at hand and if the mystic tunnel connecting our world to that of Heriton is not sealed... well, let us say that the future is not very bright. George's ancestors were also aliens who found and hid the box which controls this tunnel.

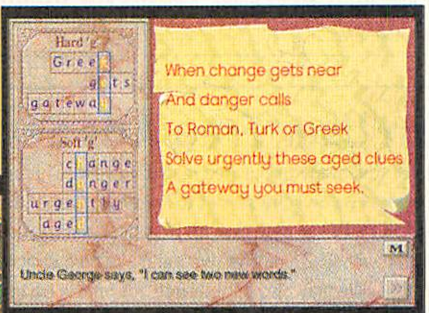
Your opponents in this adventure are the Watchers who have found the box and are now searching for the three keys which control it. Taking on the role of the nieces and nephews, children can work individually or in groups on their quest for the keys. Knowing where to start is essential and one of Uncle George's ancient books gives clues to where the keys can be found, as long as the selection of linguistic, maths and logic puzzles can be solved.

The adventure uses the same storyline and characters as the TV series but details have been changed so children have to rely on their skills rather than memory. There are 13 activities which have to be worked on in order, although you can save at any time – just don't forget the code word or it's back to the beginning again. The same can be repeated with different words/poems or variations coming up. Teachers have a password so they can go to any activity at will and set it up for a specific child if you want him or her to practise a particular skill.

Moving through the adventure is straightforward and clear instructions are given on each page. The adventure starts with a spot of sign repair work where word endings must be put in the right places. Children can drag words into place or click to attach it to the pointer and click again to drop it – useful for children with different amounts of mouse control.

One activity which proved very popular was *Are you an Alien?* where figures of speech must be matched to their meanings. And by this test a number of children I tested are definitely not from this planet. If they get less than three right the activity is reset with another group of expressions such as *Pull your socks up,* or *Make a pig's ear of it.*







The manual gives useful extension ideas and the on-screen M button takes you to the main menu where you can go back to an earlier activity for clues or just to play again – but they can't skip an activity.

The hard and soft 'g' puzzle was excellent and really got my children thinking about words and led to some useful follow-up work. Other activities ask children to find words beginning with 'wh', play with homonyms, look for silent letters, make a poem rhyme or deal with spelling, punctuation, order and context among others. Remember, people who can't rhyme can't be trusted.

Other skills come into play too with a spot of code cracking at the museum which needs a strategy and a methodical approach to find the right colours while the co-ordinate game uses mapping skills but also asks children to interpret the meter's 'cold' and 'hot' response for their next guess. The final puzzle asks children to lock the box by putting the three keys in the right permutation, they can rely on luck or system but succeed and they will a code to access any of the 13 activities again.

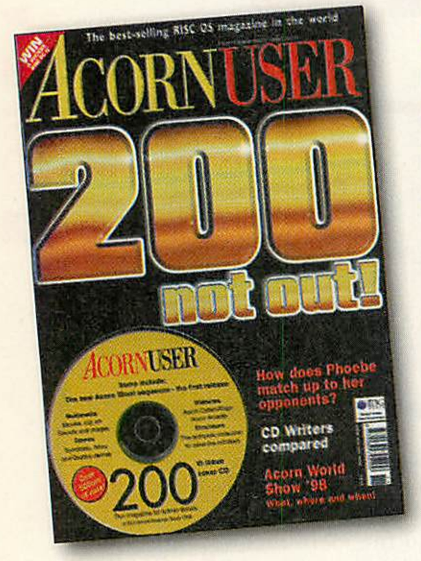
The graphics could be better and the random element more pronounced in some activities but the content is well worth the money.

Product details

Product:	The Legend of the Lost Keys
Supplier:	Logotron, 124 Cambridge Science Park, Milton Road, Cambridge CB4 0ZS
Tel:	01223 425558
Fax:	01223 425349
Ages:	7-11 (Key stage 2)
Price:	£27 (available on tri-format CD-ROM or floppy disc)
E-mail:	info@logo.com
Web:	www.logo.com

BACK issues

Missed out on one of our previous issues? Now's your opportunity to bring your collection up to date. But hurry – stocks are limited



Issue 200 – November 1998
- CD Writers
- Relational databases #2
- History of Acorn User
- Another fantastic cover CD Rom



Issue 199 – October 1998
- Acorns and Blake's 7
- Relational databases
- Slow Scan TV
- Radio pictures on disc



Issue 198 – September 1998
- TopModel step-by-step
- ANT Internet Suite made easy
- Desk utilities
- Stellate demo on disc

Issue 190 – January 1998
- 3D vector graphics
- Barcode software
- Club Scene update
- BotKiller and Pendown HTML on disc

Issue 191 – February 1998
- New ArtWorks series
- Website creation
- How to customise your machine
- RailPro on disc

Issue 192 – March 1998
- Teletext
- DataPower 2
- Compiling Java
- LineDemo and TopicArt on disc

Issue 193 – April 1998
- TextEase
- DrawWorks Designer
- Impact Pro
- raFS on disc

Issue 194 – May 1998
- Doom special
- Acorns over Egypt
- *Newsreader* review
- R-Comp interview

Issue 195 – June 1998
- Printers reviewed
- SEMERC success story
- Automating your home
- Wizard Apprentice on disc

Issue 196 – July 1998
- Phoebe 2100
- New portable
- Show report
- TraxSequencer on disc

Issue 196 – August 1998
- New Medi computer
- Audio speakers tested
- Quality printers
- Web FX3D reviewed

Order form

- ☐ Issue 200, November 1998 ....£3.95
- ☐ Issue 199, October 1998 ....£3.95
- ☐ Issue 198, September 1998 ....£3.95
- ☐ Issue 197, August 1998......................£3.95
- ☐ Issue 196, July 1998 ....£3.95
- ☐ Issue 195, June 1998...........................£3.95
- ☐ Issue 194, May 1998 ....£3.95
- ☐ Issue 193, April 1998...........................£3.95
- ☐ Issue 192, March 1998 ....£3.95
- ☐ Issue 191, February 1998...................£3.95
- ☐ Issue 190, January 1998.....................£3.95

Name ....

Address...

....

....

.... Postcode ....

Tel No..

Please allow 14 days for delivery.
Send cheques payable to Tau Press Ltd to: Acorn User Back Issues, Media House, Adlington Park, Macclesfield SK10 4NP

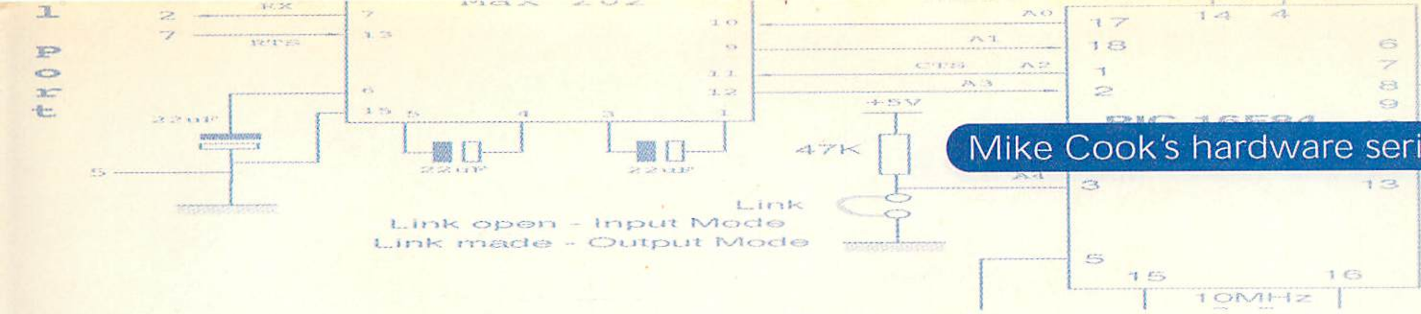
☐ *Please tick if you do NOT wish to receive further information or special offers*

FREE ADS ARE ON PAGE 56

Acorn User Free Ads Service

Why not take advantage of our free reader ad service? Fill in your details on this coupon (25 words maximum, one word per box below) and send it to Free Ads, Acorn User, Tau Press Ltd, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: freeads@acornuser.com. Only one ad per reader please. Although we try to publish every ad we receive, we can make no guarantees; publication is entirely dependent on space and time constraints. We may also publish free ads on the cover disc if magazine space is short. Please fill in your name and telephone number below – these will not be published, but they enable us to contact you in case of any queries. Please include your town/county in each ad to help other readers with their purchasing decision.

Your name:.. Telephone no: ....



The serial *continues*

Mike Cook makes a PIC serial user port

Last year I did a series of articles describing tools for producing PIC chips. However, since then I have not used PICs as a component in any of my projects, well this month I will make amends for that.

A PIC is a single chip computer that is so cheap that it can be used just like any other electronic component. As it is actually a computer in its own right it is often used in standalone projects, that is projects that involve no other computer.

Now as computers have become more sophisticated and complex they have lost some of the basic flexibility found in the very old machines. For example, in the old days you could have a computer produce a very precise and accurately timed signal. Modern computers have so many interrupts going off all over the place and different instructions being executed at different speeds that it is almost impossible to determine how long an operation is going to take.

This is where the PIC is extremely useful, you can delegate all the precise timing stuff to it and have your desktop computer just process the results. You can also tie the thing up looking for an input and then ferry that information over to your computer when it occurs.

Now the PIC can be connected to any computer port but perhaps the most useful one for the applications I have in mind is the serial port. This is because data can be sent at any time from the PIC and it will be automatically stored in your computer until your program retrieves the data.

The particular PIC chip I use does not have any hardware for serial interfacing but all is not lost as we can easily write some PIC software to make it send and receive serial data. Then all we need is some electronics to convert between logic levels and RS232 voltage levels and we can build a basic PIC to computer interface.

Dual purpose

So this month's project is not *only* a simple serial user port but the hardware will also form the foundation of many more PIC/computer-based projects. You can think of it as a basic building block that can be used time and time again.

The only snag with bit banging – making software behave like a serial UART – is that while you can transmit or receive data you can't do it at the same time. True there are techniques with timers and interrupts to allow you to achieve full duplex communication but they do take up a lot of the PIC's resources. Most of the time half duplex will do, but for when it could be a problem then some simple handshaking will prevent any potential data loss. My previous designs of serial user ports all use a simple, no handshaking design, however, this time I have included handshaking signals. As this does take up two I/O lines from our PIC then on some designs you might like to forgo one or both of these lines.

I have used the ~CTS (clear to send) line to tell the computer when the PIC is waiting for a byte of serial data. Even if you have sent a byte to the serial port the computer will not transmit it until it sees the ~CTS line is true (logic zero). By using this line you don't have to worry about whether the PIC is busy doing something else when you try to send it some data.

The ~RTS (request to send) works the other way round, this is the computer telling the PIC that it is ready to receive data. So you can write the PIC routines so that it will only send data when this line is low. You can see that this line is not so important, as the computer is ready most of the time, it's only when the PIC has sent lots of data and it hasn't been picked up on the computer side that the buffer fills and the ~TS line gets pulled to a non-ready state (logic one). Therefore, I would suggest that if you need an extra line on the PIC then this is the one you think about dropping first.

The circuit in the figure shows the circuit and you will see that it consists of just two chips, the PIC and level translator MAX202. This last chip is quite clever because it generates the positive and negative voltages you need to drive an RS232 serial port. It does this by using oscillators and diode pumps, otherwise known as voltage inverters, that's why it is surrounded by several large capacitors. Now the PIC chip I have used is the 16F84 and not the 16C84 of my original articles, the reason for this is that this chip is cheaper and faster, it also has twice as much RAM but that is not a consideration here.

However, there is a small difference between the two chips, it's the state of the 'power up timer fuse' which is inverted on this chip. Therefore, to have the power up timer enabled make sure that it is disabled on my blower software. The faster speed of this chip means that you can operate it with a 10MHz crystal to give you a time of 0.4uS per instruction cycle (4 clock cycles per instruction cycle). This allows more accurate timing to be produced and allows me to use a faster serial baud rate.

I must admit I did get rather irritated by some people commenting that 9,600 baud used in my previous serial interfaces was 'not very fast', well in terms of the Internet and downloading images and applications it is not, but for turning things on and off it is plenty fast enough, in fact it is faster than BASIC can churn out the numbers. However, just to show willing I have made this interface work at twice that speed namely 19,200 baud.

Added value

Now in order to make this project one worth doing in its own right I have used the one remaining line on the A port as a mode selector and left the B port free for interfacing to. This mode select line is only checked on power up or reset of the PIC and defines weather port B will be treated as an input or an output.

With the link made the PIC acts as an output port, any byte it receives will be placed on the output port B and the same byte echoed back to the computer. When it is used in the input mode any byte it receives is ignored but that fact that a byte has been received prompts the PIC to send back the state it finds on the input port B.

The source code for this project is on the cover disc as a text file, and the most important part is the serial transmit and receive routines. However, first of all look at the 'Start' label, this code first initialises port A for serial communications and then looks at the mode link. Depending on the logic state it finds it will initialise port B as inputs or outputs and then go into one of two loops that constantly look for an input byte and then either output it or send back the state of the input bits. Note here when ➤

port B is initialised as an input the pull up resistors are also turned on, that means that if any input bit is not connected to anything it reads as a logic one.

Bit banging

Now let's get on to the bit banging, the easiest to understand is the transmit side, look at the 'Send' label. It starts by holding until the ~RTS line is low, if you don't want to use the ~RTS line then miss out these first two lines, remember not to delete the label. The serial output is then set low to form the start bit and the main loop is entered.

Basically this looks at the least significant bit of the byte you are sending and sets the serial output line accordingly. Then the byte is shifted to the right so that next time round the loop the least significant bit will be the next one to send. To get the timing right there is a delay subroutine in the loop, it's the calculation of this subroutine that is crucial to the working of the system.

To do this we first have to work out how many machine cycles are in the main loop and that includes the call to the delay subroutine. Now most instructions take one cycle but instructions that alter the program counter take two. Fortunately where there is a 'test and skip if true' instruction it is easy to see that this takes two cycles if true, if not it takes one cycle and the next instruction is not skipped and that takes one cycle as well, so the count is always two here. This gives 10 machine cycles in the main loop.

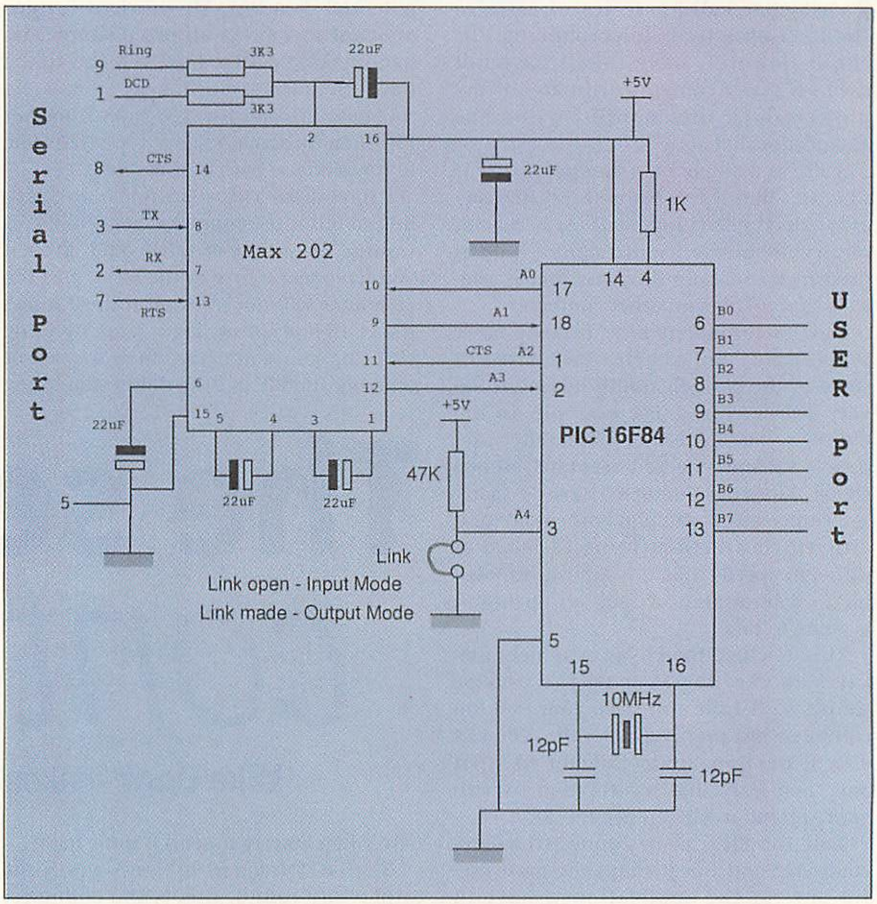
Now for the subroutine, there are a number of instructions that are always obeyed no matter how many times round the loop you go, in this case it amounts to four cycles, then there are three cycles for each time round the loop. So to get a precise time you need to use:

```
10c + 4c + 3cn = Delay
```

Where c is the time for one machine cycle and n is the number of times round the loop in the delay subroutine. The delay for one data bit at 19,200 bits per second is 52uS and one machine cycle takes four clock cycles so with a 10MHz clock you have 0.4uS per machine cycle. This works out at a value of 39, to the nearest machine cycle that is.

Finally, there needs to be a small delay after the initial start bit to compensate for the fact that not all the loop is gone through the first time. With this information you should be able to work out the number of times you need to go round the loop for other baud rates or other PIC clock frequencies.

The receive routine works in a similar way, first of all the ~CTS handshaking is cleared to enable the computer to send data and then a loop is entered until the start bit is detected. Immediately the ~CTS line is raised to prevent any more data than this single byte being sent. Now you have to delay for a half baud period so that you can sample the serial input in the centre of the bit time. After that you need a full baud delay to keep sampling in the middle of each bit. As each bit is input you add it to the bit pattern and shift it along to make way for the next bit. As the least significant bit comes in first you need to add bits to the most significant bit and shift right, the opposite of the send routines. To simplify matters I have not used any parity bits.



Now there is a snag with this ~CTS handshaking system that is to do with the design of the hardware chip inside the computer. When you signal to the computer that you don't want any more data sending it finishes sending the current byte and sends the next one as well. This is because in the hardware there is a serial shift register which contains the byte currently being sent and a one byte buffer holding the next byte to be sent. The ~CTS line only stops the buffer being filled it does not stop the data already in the buffer being sent. Therefore, if you fill the computer's send buffer the PIC will only see every other byte as it misses the second byte because it is sending you one back.

To make matters further complicated when you initially start sending data from the computer the ~CTS door shuts when the first byte has started to be transmitted and before the buffer has been filled. Therefore, you get the first and second bytes but after that you miss every other one. This can be worked around by delaying slightly the rate at which you send data to the PIC and ensuring you don't fill the sending buffer with too much data.

There is an application to test this on the cover disc called PICmon. In the output mode any bit change in the output bit pattern will be reflected in the input bit pattern. However, in the input mode it doesn't matter what is going out you will only see on the input bits the logic state of the lines B0 to B7 on the PIC. When there is nothing connected this will be a logic 1 because the input pull up resistors have been activated. If you have not got access to the PIC blower hardware and wish to purchase a pre-programmed device then see the ReadMe file on the cover disc.

Now we can use these routines as a basic building block for all sorts of projects using this PIC and our computer, look out for the first soon. AU


STOP



Acorn Rambles through Wood

The tour continues ably conducted as ever by **Mike Cook**

A little bit of trivia came my way this month it's that Nyquist, the mathematician who did a lot of fundamental work on sampling theory was American and that his first name was Harry. I have been using his work most of my life and I never knew his first name.

Anyway, let's kick off with some feedback from readers, in October Harry Smith wanted to run ViewSheet on a modern machine. Well it turns out there are several solutions to his problem, as my father used to say, "There's more ways of killing a pig than strangling it with butter." We never really found out why he said it!

First up is James Peacock who can still remember how to get an image of a sideways ROM:

It is possible to get BBC ROM images, like ViewSheet, to work under !65Host which was supplied with RISC OS (though it might not be now). I have sent you a BASIC program which will save a sideways ROM to disc. All you need is the number of the slot the ROM is in. To do this type *ROMS on a Master, on a model B try typing *FX 142,n where n is between 15 and 0 to find which n enters ViewSheet. To get it to work with !65Host: Transfer the ROM image to your RISC OS machine and copy it in to the !65Host directory, giving it a sensible name, say 'ViewSheet' and set its file type to &BBC (BBC ROM). You now have to edit the !Run file of !65Host to include the following command after the existing CacheROM commands:

```
CacheROM 8 <65Host$Dir>.ViewSheet
```

The #8 is the 'slot' to load the ROM image into, this may have to be altered if you have another ROM in that slot already.

James includes a program to run on an old machine and get the ROM image, I have put it on the cover disc. Next Steve Lee has another slant on the problem:

The answer which Mike Cook seems to have missed is Acorn's 65Tube emulator as supplied with RISC OS 3. 65Tube emulates a 6502 processor in such a way that it thinks it is connected to your RISC OS machine by a Tube interface. Sideways ROMs which were written in such a way to allow being run at the other end of a Tube interface will run just as well on this as on a real one.

In fact applications like ViewSheet effectively become enhanced as larger screen modes can be used, and almost a full 32K is available to ViewSheet. It doesn't seem to like screen modes bigger than about 64x80 characters, but Mode 27 is fine. The tube emulator can even be run in a task window, but the spreadsheet itself doesn't really work very well like that. To run it you get a ROM image of the ViewSheet ROM, set type it to &BBC, and *Run it from inside the 65Tube emulator.

Next Paul Goldsmith has this to say on the subject:

Harry Smith gave no indication as to the storage ability of his A3000. Copies of View files can be dragged from the Filer window of an ADFS L disc to Edit. All that has to be done is to use CR<->LF or ^F8 to turn it into an Arc file. A little use of Find and Replace will sort out any other anomalies. David Holden has adapted View to run under OS3. The Arm Club PD disc "BBC1" has his Application on it.

John Crane sounds a work of caution by saying that View Sheet is copy protected so that it will not run in RAM. I would think that was easy to do, just have a section of code to wipe some memory locations and if it is in ROM nothing happens but if it is in RAM then the program gets wiped. However, for £1 the PD disc called BBC2 has the View family ROM images suitably modified, the address is simply Freepost, The Arm Club. Another disc called BBC1 contains a number of transfer utilities. This disc numbering is at odds with Paul's information so if you are not getting both specify what you want.

Elaine Kemp has yet another view on things, she writes:

I used to use View Sheet on the A5000 before I got a copy of Pipedream which will load in View sheet files but not save them. Therefore, Harry Smith could use Pipedream to read his old files. I would have thought that you could get a ROM image by typing *SAVE SHEET 8000 + 400 from the command screen of View Sheet.

This illustrates the value of writing in, because in all the letters I received on the subject most people had a new piece of information to impart. Thanks to everyone who has contributed to the solution including any of you who did not get your letter in before this went to press.

Now changing the topic, Angus Mackenzie contacted me about the Infra Red transmitter project, it seems that the chips I used are no longer available from Farnell. I was gutted to hear about the 74LS13 as I have been using it all my life to make little gated free-running oscillators, it was just like a death in the family. However, it is still available from those advertisers in Electronics magazines that fill a page with lots of small numbers.

Anyway Angus has tracked down some substitutes:

You might not be surprised to learn that the TSOP1838, made by Telefunken and available from Maplin at £1.55 (NU67X) appears to be an adequate alternative to the PIC12043S you suggest in the October '98 issue of Acorn User. I certainly had it producing pulses on the logic scope this afternoon. Incidentally the other unconnected lines sometimes showed some signs of changing state in sympathy. Should they be tied to ground at all or would this be ill advised? I did on occasion manage to lock the computer up too, requiring a switch-off to restore function.

I think there is a bug in the Logic scope software because sometimes the "run"/"single shot" buttons disappear when clicked. It only does it occasionally so I have not been able to find the problem. I suspect it is something like a window definition not having enough memory or something overflowing into some memory space. However, I have not got it to hang up, nor even require an Alt-Break. Unused lines on the printer port when configured as an input are a very high impedance therefore they can get charges easily induced on them especially if adjacent lines are flapping up and down. It actually does no harm but you can tie them down to earth (or +5) if you would rather not see it happening.

Later Angus contacted me again:

I have a feeling that the lock-up happens when I have both LScope and IRtx loaded at the same time. Since they are both keenly interested in controlling the parallel port, I suppose that would do it.

Yes that might do it but I am still not sure why. There is a way of preventing other applications from claiming the printer port once on application has got it. What you do is open a file called 'parallel:' (the colon is important) then when you are finished with it

you close that file. Any other application trying to do that would not be able to open the file and would get an error, thus preventing two applications from trying to manipulate the port. However, I rarely bother with that as most of my code is experimental and if you are running I assume you know what you are doing.

Mr K Rolfe is having rodent problems he writes:
I am starting to have problems with my mouse. It seems to double-click when I only single click, this seems to be intermittent. I have bought a new mouse but the problem still happens. Can you suggest whether this is a software problem or hardware. The new mouse is not an Acorn one. This is driving me mad can you help.

I would have said it was a hardware problem as often you get contact bounce on micro switches that can look like a double key press. However, as the same problem exists with a new mouse then your problem is almost certain to be software. It sounds like the double click time has been reset to a very short or very long interval. Use the mouse setup dialogue boxes or press F12 and type in:

```
*Configure WimpDoubleClickDelay 10
```

That sets it up for one tenth of a second which is about standard. If that fails then a small capacitor like 1uF placed between the select output of the mouse and ground would cure it. However you might have to open up the mouse to do this.

Christopher Flynn has a query concerning icons, he asks:
How can you make an icon look "greyed-out" as if its not selected, using !Paint?

What you need to do is to zoom up the icon so that you can see individual pixels. Then you need to make every other pixel grey in a chequer board pattern. As an alternative to grey you can add a mask and make these pixels transparent. The final zoomed out view will look "greyed-out".

Mr C A Roff has found that upgrading does not always lead to an improved computer.
Recently I changed my monitor over for a Shinho AV2 17ins monitor. It works fine only in certain modes. This is OK for general programs but unfortunately I can no longer play the games on it. Also more important I can no longer run BASIC programs as the monitor will not take the change in modes. Mostly the Acorn modes. I have an A5000 with a CC Gold Colour Card.

It sounds like you are stuck with this one as it seems that your monitor is not a flexible as your old one. It is more expensive to make a large monitor multiscan capable than a smaller one. Therefore, some of the budget monitors scrimp on the multi-modeness capabilities that will not be needed in the PC world. The older Acorn modes are based on domestic TV standards and that is something that has not been used in the PC world for some time, therefore it tends not to be catered for. With a Risc PC monitor definition files allow these older modes to be emulated at higher frame rates but I don't know of anything that will help you on your machine.

Keven is a keen games player but wants to improve his collection, he asks:
Is there such a thing as a Play Station emulator for an Risc PC 700 Strong ARM and or an A3000? If there is please how do I get one?

No as far as I know and with Play Stations at only a hundred quid I fear there is little motivation. Also given the fact that emulation sucks power out of a computer you would be unlikely to be able to make it anything like real time or even playable with the fastest newest Acorn machine. I have been wrong about emulator availability in the past but I think I am on safe ground here.

Garan Jenkin has been having trouble with moving an ethernet adaptor from an A4 to a Risc PC. In the process he stumbled across something odd about his unique machine ID number.
On my A4, I read the machine ID using OS_ReadSysInfo, with R0=2. On exit R3 and R4 hold the low and high parts of the machine ID. The low part turned out to be a six digit number, which I noticed, when converted into hex formed the last part of the ethernet address of the ethernet card when I loaded EtherP up and looked at 'epinfo' on the command line. Then I moved to the Risc PC and got the following results for the same program I ran on my A4. Answers got from the A4 are in brackets:

Results from OS_ReadSysInfo

R0	**16843008**	**(1)**
R1	**1**	**(1)**
R2	**1**	**(1)**
Machine ID		
R3	**-1543480367**	**(691693)**
R4	**80**	**(0)**

It is interesting that in the PRMs it states that on exit, R0 to R2 can take only the values 0 or 1, which makes my result from the Risc PC look very odd. Also, my machine ID from the Risc PC is negative, which is odd also. I was wondering whether you might be able to throw any light on this matter.

The OS_ReadSysInfo is designed to allow programs to see what sort of chips are fitted in a particular machine so that if they are making use of some special features they can adapt to different models of computer.

Modern Acorn machines are fitted with a chip that gives a unique number, this is used in networking to uniquely identify a machine. It is also used by some applications to prevent software piracy although Acorn frowns on this use. What you are missing is that the Programmers Reference manual has a Volume 5, supplement for RISC OS 3.5, in that on page 129 it explains that the value returned by R0 has been extended, it is now split into four bytes and each byte can contain either 0 or 1.

For the most significant byte 0 indicates a VIDC1a and 1 indicates a VIDC20, the next byte has 0 indicating a MEMC1 chip and 1 indicating an IOMD, the next byte a 0 shows a IOC control chip is fitted and a 1 shows it is an IOMD. Finally the least significant byte as before has a 1 indicating an IOEB ASIC chip is included in this design.

Therefore, if you take the value returned in R0, 16843008 and express it in hex you get 01 01 01 00 which is a lot less complex. As to your ID number there is nothing strange in a negative one, all that means is that the most significant bit bit of that number has been set. When this bit pattern is interpreted as a decimal number, which is what happens when you tell the computer to print a value, it interprets numbers with the top bit set as negative.

Again if you express -1543480367 you get A4 00 5B D1 which while not being of any significance is not remarkable. Your A4 machines ID of 691693 is simply a bit pattern of 00 0A 8D ED. I hope that clears things up.

Alan Metcalfe lives just down the road from me in Accrington, a place known mainly for its football team, he is delving into the world of hardware and writes:
I am embarking on building your IR organiser project and have managed to source all the components to build up the Vero board. However, when I started to lay out the board I spotted that the circuit has 4 electrolytic capacitors but the photo of the mounting shows 5. So the question is what is its value and where is it connected to. A brief reply would be greatly appreciated.

The extra capacitor is simply a supply decoupling capacitor and I am sorry it was missed off the circuit. The value is not critical, in fact it probably does not matter at all, so why have I included it?

Well force of habit really, you see whenever you get components gathered together and working the current they take will change slightly with the signals they are processing. This in turn leads to small changes in the power supply voltage in the local vicinity which in turn can lead to components not functioning correctly. This problem is solved by simply placing a capacitor across the power supply as physically close to the chip as possible. To do a really thorough job you need to use two capacitors, something like a 0.1 to 0.01uF disc ceramic and a 22 – 47uF electrolytic wired in parallel.

The electrolytic provides smoothing for long term variations but, at high frequencies and thus short term variations, the construction of the capacitor is such that it looks like an inductor and so will not work. That's where the smaller capacitor comes in, being a ceramic capacitor it has a much lower inductance and so works at higher frequencies. So a combination of the two will often prevent interference. Now this is true for all circuits and as a matter of course I always include some supply decoupling in everything I build.

However, when it comes to the circuit diagram the decoupling often needlessly complicates the circuit so it is often omitted. I do try to always include it but this time I missed it out. Oh sorry, you wanted something short well 22uF across pins 15 & 16 of the MAX202, but it probably doesn't matter.

TECS

Scottish Acorn Show 98
Glasgow Marriott Hotel
8th November 1998   10am - 5pm
http://www.tecs.co.uk/sacs/

NEW Phoebe 2100 (Risc PC II) Systems

Phoebe 2100 32Mb, 32xCD, 6.4Gb HD	£1499
with 15" Iiyama monitor	£1649
with 17" CTX Monitor (3yr warranty)	£1699

LAUNCH OFFER - FREE ADDITIONAL 32Mbwith orders placed before 31/8/98

SA Risc PC & A7000+ Systems

SA 233 Risc PC - call for details of exciting new Acorn trade-in deal. Save up to £ 200 off prices.

A7000+, 24Mb RAM, 1.2GbHD 24xCD, 15" Monitor	£840

Examples only - call for custom configurations

Components & Peripherals

24x & 32x Hitachi CD ROM drives from	£40
16Mb EDO RAM (tested for RPC)	£15
32Mb EDO RAM " "	£25
64Mb EDO RAM " "	£call
15" Monitors (3yr warranty)	£125
17" Monitors (3yr warranty)	£230

We also supply a full range of printers, expansion cards, modems etc. Please call for more info.

Clearance Corner

1Mb Risc PC VRAM (reconditioned)	£15
Risc OS 3.11 Upgrade (new)	£28
ARM 610 Processor (reconditioned)	£25
ARM 710 Processor (reconditioned)	£35
HP Turbodriver Software (new)	£30
Canon Turbodriver Software (new)	£30

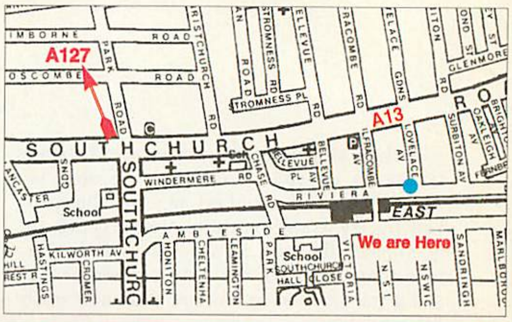
Tel 0141 644 4952

Fax 0141 644 5299
http://www.tecs.co.uk
E-mail sales@tecs.co.uk
140 Busby Road, Clarkston, Glasgow G76 8BG
NB ALL PRICES EXCLUDE VAT @ 17.5%

ESSEX

GeneSys *Custom built systems*

GeneSys for all your Acorn needs, serving Education, Business and Home. High quality custom built systems for Acorn and PC.



Contact: Richard Brown

GeneSys, 41 Riviera Drive, Southend on Sea, Essex SS1 2QT
Tel: 01702 462385 Fax: 01702 469224 E-mail: genesys@argonet.co.uk

NORTH WEST

NEW! **TOUCHPAD**
For use with PS2Mouse, PS2Mouse+ or directly on A7000 series machines. Supports "tap-clicks". Supplied complete with stylus and wristpad.
£34.95 Alone
£29.95 With PS2Mouse/PS2Mouse+

PCJoy Use Analogue joysticks on your Acorn machine. *£39.95*
Solo Interface for Atari-style joysticks *£14.95*
Printer switch boxes inc cable *£17.95*
Obsolete Drivers Disk for old joysticks/joypads *£7.95*
Light Aircraft Sim. *THE* simulator for Acorn PC card *£69.95*
PS2Mouse Allows the use of any PS/2 mouse (6 pin connector) on an Acorn machine, including trackballs and remote control devices!
PS2Mouse+ includes through port and jacks for switch inputs.
£24.95 PS2Mouse
£39.95 PS2Mouse+

Just a selection from our range of Game, Interface and Access products.

Phone, write or email for a free product information flyer!

STD Stuart Tyrrell Developments
Stuart Tyrrell Developments
PO Box 183, Oldham OL2 8FB
Orange: 0976 255 256 (9am-9pm)
Info@STDevel.demon.co.uk http://www.stdevel.demon.co.uk
All prices include P&P. All trademarks acknowleged. E&OE
Access/Visa/Delta/Mastercard accepted.

SOUTH COAST

- Hardware
- Software
- Installation
- Repairs

CJE MICRO'S

78 Brighton Road
Worthing
West Sussex
BN11 2EN
Tel : 01903 523222
Fax : 01903 523679
sales@cje.co.uk
http://www.cje.co.uk/

Open 6 days a week
With demonstrations available

HIGHLANDS

ProAction

We thought we'd tell you something about Frak...

but what can we say?

Wardlaw Surveys

Authorised Acorn Dealer, for all your needs from supply, service, repair & full after sales.

Tel/Fax:
01463 831214

CUMBRIA

WEST YORKSHIRE

NORTH WEST

LONDON

MIDLANDS & OXFORD

SOUTH EAST

LONDON & ESSEX

SUFFOLK

Amazing free gifts and special offers!!!

Over £100 worth of magazines and software for just £39.99

CURRENT SUBSCRIBERS – you can take advantage of these offers by renewing your subscription at any time

ACORN USER

the world's number 1 Acorn magazine

You already know what a great magazine ACORN USER is. It is the only Acorn magazine with up-to-the-minute Acorn news, in-depth hardware and software reviews, and without doubt the best cover discs available.

What you might not know is that by taking out a subscription today, not only are you guaranteed never to miss an issue of the biggest and best Acorn magazine in the world, but you can also claim an excellent free gift or special offer, available exclusively to all new ACORN USER subscribers.

*All our software offers are StrongARM compatible.

Call our 24-hour Subscription Hotline
Tel: 0870 606 0424
Fax: 01369 701 187
Email: dbscot@globalnet.co.uk
Please quote code 'A9812' when subscribing by phone

SUBSCRIBING HAS NEVER BEEN EASIER

DIRECT Debit

Why not make your subscription even easier and subscribe by Direct Debit, spreading the cost of your subscription over quarterly hassle-free payments. Over a year you will receive 13 copies of Acorn User. What's more, you need never worry about missing an issue again, as the subscription continues until you decide to cancel. Direct Debit subscriptions cannot be taken over the phone or by fax.

TEXTEASE



ONLY £20
RRP £49

The most flexible, straightforward and comprehensive wordprocessor and desktop publisher ever. Use it to make letters, invitations, cards, banners, notices, posters, overhead foils, in fact any kind of text and graphics. It is designed to be ideal for children and is invaluable for older children and adults.

RHAPSODY



FREE
RRP £59.99

Your chance to compose your own musical score. Rhapsody allows you to modify and manipulate music as a wordprocessor does text. You can enter score by hand, note by note, or, if a MIDI Interface is fitted to your computer, you can play a tune using a MIDI keyboard and capture the music in Rhapsody. The music can then be transcribed ready for editing, replaying, etc. In the shops £59.99 as an Acorn User subscriber you can claim it for **free**!

ARGO net

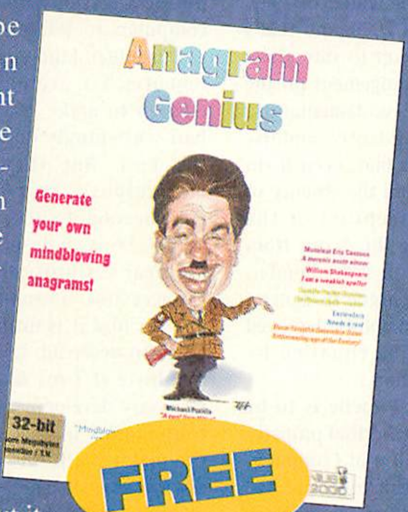
THE INTERNET EXPERTS

SPECIAL OFFER FOR DIRECT DEBIT SUBSCRIBERS

If you are a Direct Debit subscriber why not take advantage of our special subscription deal with Argonet – subscribe now and get an extra free month of connection time – see page 22 for details.

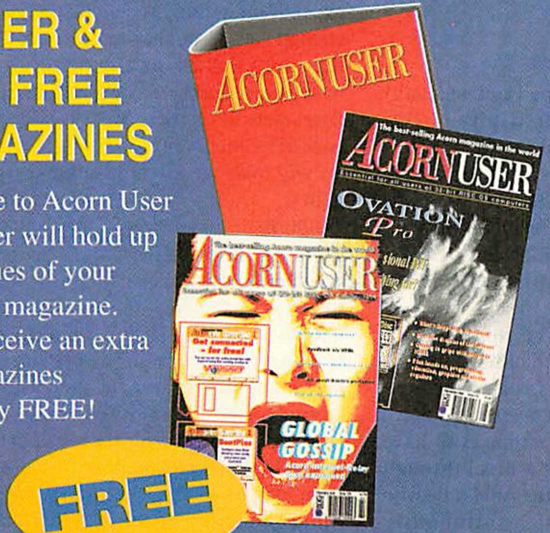
ANAGRAM GENIUS

Prepare to be astounded! Seven years of development have produced the world's most sophisticated anagram generator. Give the software a name or piece of text and it will use powerful artificial intelligence techniques to rearrange the letters to say wierd and wonderful things about it.



BINDER & TWO FREE MAGAZINES

Exclusive to Acorn User this binder will hold up to 13 issues of your favourite magazine. PLUS receive an extra two magazines absolutely FREE!



Yes! I will subscribe...

1 Name (Mr/Mrs/Ms/Miss).. Age...........

Address ....

....

....

Postcode ....Tel...

E-mail address ....

2 Please send me the following FREE Gift/Special Offer (tick one):

Code	Offer	Price	Code	Offer	Price
4247	☐ Rhapsody	FREE	4258	☐ Anagram Genius	FREE
4248	☐ TextEase	£20	4771	☐ FREE month on Arognet (New Direct Debit subscribers only, see page 22)	FREE
4705	☐ Binder & 2 magazines	FREE			

3a **There's never been a better time to subscribe so take advantage of one of these offers TODAY. See section 2**

A9812UN ☐ UK £39.99 A9812EN ☐ EU £53.99 A9812WN ☐ World £68.99*

To renew subscription please tick:

A9812UR ☐ UK £39.99 A9812ER ☐ EU £53.99 A9812WR ☐ World £68.99*

*Unfortunately World subscribers are not eligible to receive the free gift/special offer

I wish to pay by: ☐ Cheque/postal order made payable to Tau Press

☐ Credit card (Visa/Access/Barclaycard/Mastercard/Eurocard/Connect)

Expiry date [/] Signature...

Card No. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Instruction to your Bank or Building Society to pay by Direct Debit DIRECT Debit

3b Please enrol me as a subscriber to *Acorn User*.

4210 ☐ with payments of £9.99 by continuous quarterly direct debit

See section 2.

Your subscription will continue until you cancel.

Name of Bank/Building Society ....

Address ....

....

Name of Account Holder(s) ....

Bank/Building Society Account No. ☐☐☐☐☐☐☐☐

Branch Sort Code ☐☐☐☐☐☐

Date ....Signature(s)...

Instruction to your Bank or Building Society: Originator's ID No. 851412

Please pay IDG Media Direct Debits from the account detailed in this Instuction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this Instruction may remain with IDG Media and, if so, details will be passed electronically to my Bank/Building Society. Reference No. AU201

Signature ....

Date...

4 Now send your completed form and payment to:
Acorn User, Tau Press, PO Box 9, Dunoon, Argyll PA23 8QQ.
Please state if credit card billing address is different from the delivery address.
Photocopies or handwritten versions of the above information are acceptable.

This guarantee should be detached and retained by the Payer.

The Direct Debit Guarantee

DIRECT Debit

- This Guarantee is offered by all Banks and Building Societies that take part in the Direct Debit Scheme.
- If the amounts to be paid or the payments dates change IDG Media will notify you 14 working days in advance of your account being debited or as otherwise agreed.
- If an error is made by IDG Media or your Bank or Building Society, you are guaranteed a full and immediate refund from your branch of the amount paid.
- You can cancel a Direct Debit at any time by writing to your Bank or Building Society. Please also send a copy of your letter to us.

Write to Acorn User, Media House, Adlington Park, Macclesfield, SK10 4NP. E-mail: auletters@tau-press.com

LETTERS

Fundamentalism

Though most of us appear disposed to fight for the continued existence of Our Kind of Computer, a schism threatens to develop between Fundamentalists and Reformers.

The Fundamentalists demand the rescue and release of Phoebe. They will have no truck with non-ARM hardware. They will not hear of the desertion or adulteration of RISC OS. They will countenance no other Graphical User Interface.

The Reformers expound an imperative need, and a now-or-never opportunity, to open, modernise and adapt Our Kind of Computer. They are not enchanted with Phoebe but with a New Machine, already baptised the Phoenix. They are not ideologically wedded to the ARM. Their most consistent and insistent theme is the adoption of Linux, instead of RISC OS. They are at one with the Fundamentalists in their admiration of the GUI, but they envisage its survival as a layer on top of Linux.

There are signs that the Fundamentalists are rallying round a man, Peter Bondar, and any business initiatives that he might lead. The Reformers, on the other hand, are rallying to an idea and focusing foremost on organising its technical execution.

I also have the impression the Fundamentalist mood is strongest among the Acorn faithful who are not computer professionals, while the latter lean to Reform.

I am a professional and a Reformer. But I see unity as vital, and I also appreciate (paradoxically enough) an element of worldly realism in the Fundamentalist stance. As a Reformer, I am here to attempt to win round the Fundamentalists, and to concede as much of their position as I think is right. The clearest and most concrete Reforming vision seems to be that of Ross Tierney of Eidos. The Tierney Specification:

`http://www.argonet.co.uk/users/kraisee/phoenix/`

is to me the best hope for the future of Our Kind of Computer suggested so far.

I believe the Fundamentalists are probably right that Phoebe must be rescued and released though I am not supremely confident about that. A Phoebe rescue that all of us backed, if it flopped, would probably exhaust the resources, the will, and the credibility of all concerned.

On the other hand, nothing but the rescue of the Phoebe is going to keep Our Kind of Computer visibly alive and in any kind of contention for another year. Nothing else is going to keep that user happy and loyal who is now no longer adequately served by their Risc PC or older machine. Nothing else is going to stimulate, at all, the flow of software and peripherals or the incomes of our developers. Nothing else might pay any of the bills for the development of a superior machine. And nothing else will preserve the morale of the Acorn following (I don't care if Fundamentalism is self-fulfillingly correct on that point).

Finally, if the Tierney Spec asserts that its computer can be ready in the winter of 1999, I'd expect it the 2nd half of 2000, and that's too long to expect the market to stay alive. There's no safe and sound judgement on the Pheobe, but mine is with the Fundamentalists.

I also, and this time confidently, endorse the Fundamentalist business bias, even if (in some cases) it only stems from the absence of a technical vision, a perception of the problem as one of 'wresting the Acorn from Acorn' and messianic faith in Peter Bondar. There can't be any need to argue in general that the technical vision and ability deployed by our cause had better be equalled by business talent and organisation.

And specifically, if the Phoebe is to be rescued, if any of Acorn's intellectual property is to be reclaimed for Our Kind of Computer, then Acorn have got to be dealt with, and had better be dealt with in an expert, conciliatory and concerted manner. Peter Bondar has contributed valuably already if he does nothing more than proclaiming that point. I hope he does more than that.

The Reformist case

Our Kind of Computer, in the Fundamentalist vision, is the indissoluble trinity of Our Unique Hardware, Our Unique OS and Our Unique GUI, resplendently forged in 1987. Maybe I ought to add to that Our Uniquely Great Programming Language: BBC Basic with its integral assembler. Our Kind of Computer is like the Macintosh, but better, and for programmers.

Alas, we just can't have that kind of computer anymore. That kind of self-enclosed, self-sufficient, self-sustaining computer had a window 10 years ago, now it doesn't.

Today, it takes big-time resources to have any chance of developing a breakthrough processor architecture, like the ARM. Likewise to have any chance of continuously developing a competitive desktop OS. Likewise to have any chance of continuously developing the range of programming languages and platform-specific programming tools that software developers require to deliver the competitive applications that sell computers. Likewise to absorb the Internet technology torrent as fast as comes. Likewise to advertise on a scale that can dent the public's settled common knowledge that computers are Wintel.

Our one-of-kind computer never had those resources. Yes, Acorn weren't smart and lucky enough to make it successful; they seemed hair-whiteningly dumb sometimes – like at the end. But they'd have had to be miraculously smart and lucky for the Fundamentalist vision to be vindicated today.

RISC OS is an unsuccessful OS. The chances are near certainty that RISC OS will stay unsuccessful, no matter what is done to it, just because it is unsuccessful. Because RISC OS is unsuccessful, it is a rational bet that no machine it runs on will break big. The necessary development of RISC OS to keep it continuously in competitive contention with the major platforms (including Linux) will always surpass the economic power of its marginal following, whatever organisation or business structure that following throws up.

RISC OS will always be fighting for life with the kind of resources that Bill Gates expends on wiring his den. RISC OS 4 will not change that. As long as we're wedded to an OS that can't deliver six figures of users to its developers, and can't deliver four figures of developers to its users, we'll weave along the edge of extinction until we weave off, and the OS will take our machine and our GUI down with it.

BBC Basic remains, evidently, a life-shaping gift to apprentice and recreational programmers. It is equally clearly a language, like PL/1 or C, which the art of programming has advanced decisively beyond. It continues to dominate programming on our one-of-a-kind computer because the uniqueness of our computer chokes the free influx of new languages and tools. It's the same, only worse, for professional programmers.

In recent years, the Acorn has been a programmer's machine strictly for programmers who don't know any better or who actually like programming to be unnecessarily primitive, hard and

unprofitable. I like programming to be unnecessarily primitive, hard and unprofitable (or I wouldn't be here), but not to the extent of upholding a doomed nostalgic purism about the computers I like to do it on.

And as for the RISC OS GUI...amazing though it is to say so about any software artefact that's fundamentally unchanged this decade, it has no equal. It's a software design classic that makes the use of a computer incomparably easy for any normal human past the age of 3. It's the irresistible expression of Our Kind of Computer – the great and better way it works. There can't be any Reformist sentiment for the sacrifice of our GUI, because that sentiment is simply Defeatism. Where the GUI is concerned, there's maybe just one point of difference between Reformers and Fundamentalists. Reformers envisage a credible possibility of rescuing our GUI from the economics of extinction and putting it on the Big Map. And that means porting it to Linux:

Why Linux?

Linux already is an operating system of the modern calibre that RISC OS urgently needs to achieve. And it is free. If you need a fully specified modern OS for your desktop computer today, you don't need to write your own, or buy one, or for form a company to develop it. You can have Linux. That's what it's for.

Linux is GNU software and the de-facto target OS of Project GNU. It runs on every significant computer architecture there is, bar mainframes, and attracts software assets from them all. It hosts the whole huge GNU software catalogue, all of it free and freely portable to any Linux platform. If you want your desktop computer today to be abundantly supported by applications, languages and tools, it doesn't have to run Windows or grow its very own software industry. It can run Linux and have GNU.

ARM Linux already exists. It's not rock-steady, dummy-ready or replete with ported tools and applications. There's loads of work to be done. No more and no harder than any other outlook entails.

Linux is not owned by a rapacious billionaire, or pension funds or merchant banks. Nobody owns it. It is not controlled by accountants. It is controlled by the free collaboration of its expert users. Its source code is open. You can change it to suit your computer, your needs and your taste. Your great ideas can become part of its standard configuration. It's development and support is in the hands of its huge programming community.

Any proprietory corporate future that we now initiate for RISC OS, however idealistic, will in the unlikely event that it turns out successful eventually return us to the point where the OS is owned by pension funds and controlled by accountants. The way Linux exists is the way that we all ruefully wish RISC OS existed now.

GNU and Linux are still small forces compared to MS and Windows, but not that small. Linux numbers are already like Mac numbers and NT numbers. Phenomenally, this free, voluntary collective enterprise already has the strength – the software assets, the intellectual resources, the industry penetration, the user base – that RISC OS would need to survive and thrive in the face of Wintel as far out as we can see.

There is no way in which we can break out of the strangulating uniqueness of our one-of-a-kind computer except by adopting a successful OS. Look around for alternatives to RISC OS that are incontrovertibly winning; that are legally unchained; that Microsoft cannot buy; that do not entail a virgin port to ARM hardware; where we can take our GUI with us and welcome. Linux is a shortlist of one.

The thing that Linux still needs above all else to bring the toppling of Windows within sight is a really great GUI. We might be able to help with that.

What about the ARM?

ARM hardware is an article of Fundamentalism. It's got to be RISC OS on the ARM, or it ain't Our Kind of Computer. I'm a silly old romantic about the ARM. But today I'd be quite happy with a high-end processor (instead), if I could still have a computer that sings and dances the way I like. That's the Reformist sentiment, and of course the Linux strategy suits it: high-end processors are not a problem for Linux. But let's go with the Fundamentalist sentiment, and see where we get.

ARM processors are not being developed any more for the purpose of running Our Kind of Computer, or anything like it. They're being developed to run STBs, PDAs, cellular phones and the like. No foreseeable ARM design is going to approach the computing power of contemporaneous Intel, Digital or SPARC designs that are meant to drive computers. So there'll never be another Archimedes, a uni-processor ARM-powered desktop that blows PCs away. There'll never be a machine like that that's anything but dinky compared to the PC of the day.

A practical point is that RISC OS on the ARM has hit the buffers. RISC OS is incapable of running on the next generation of ARM designs (SA2 and ARM10) without ground-up re-coding. That drives us back to the issue of OS strategy. The strategy of perpetuating RISC OS into the next millenium is going to be costly and disruptive to the software base, at least on a scale comparable with the Linux strategy.

There is one prospect in which an ARM-powered computer can reclaim the break-through power and charisma of the Archimides. That's in a multi-processor configuration. The price/performance of ARM designs is so superior to the heavyweight architectures that it could decisively outweigh the price/performance penalty of a multi-processor configurations.

A multi-processor ARM box could blow away the PC of the day, which would not only be what Our Kind of Computer is supposed to do, it would sell it like hell – if it wasn't bound to an esoteric OS with a cottage software industry. Furthermore a multi-processor development does not require Intel-like resources. It requires engineering talent. And it requires a multi-processor-capable OS, which Linux is, but RISC OS isn't and isn't going to be without (once again) a radical re-write.

The multi-processor ARM computer is Acorn folklore. It has always been the idea that was going to put our one-of-a-kind computer back on top with one mighty bound. Had it ever materialised, we would probably not be tearing hair and gnashing teeth. It never materialised because RISC OS couldn't run it, and making RISC OS run it was always too mighty a bound for Acorn with the puny profits of selling RISC OS computers. It's back to the OS.

The trouble with pluralism

There's no technical reason why, beyond the Phoebe, we should not see both OS strategies pursued, Reformers and Fundamentalists just going their separate ways – which is exactly the schism I don't want.

Two breakaway enterprises are bound to hurt each other's chances of success, splintering their contested niche market. ARM Linux in any event is here to stay, and is going to gain ground as long as there are ARM computers to be bought, because Linux is gaining ground everywhere.

The worst of all possible worlds is a scenario in which a Fundamentalist enterprise, committed to the continuation of RISC OS, succeeds in appearing to be Acorn Continued, the Official ARM computer business; fatally undermines the market for a Reformist enterprise; succeeds in keeping ARM Linux undergound; and then itself succumbs to the basically unchanged economic adversities that Fundamentalism faces. Nothing would come out of that alive.

The key is the operating system: Phoebe now, Linux next.

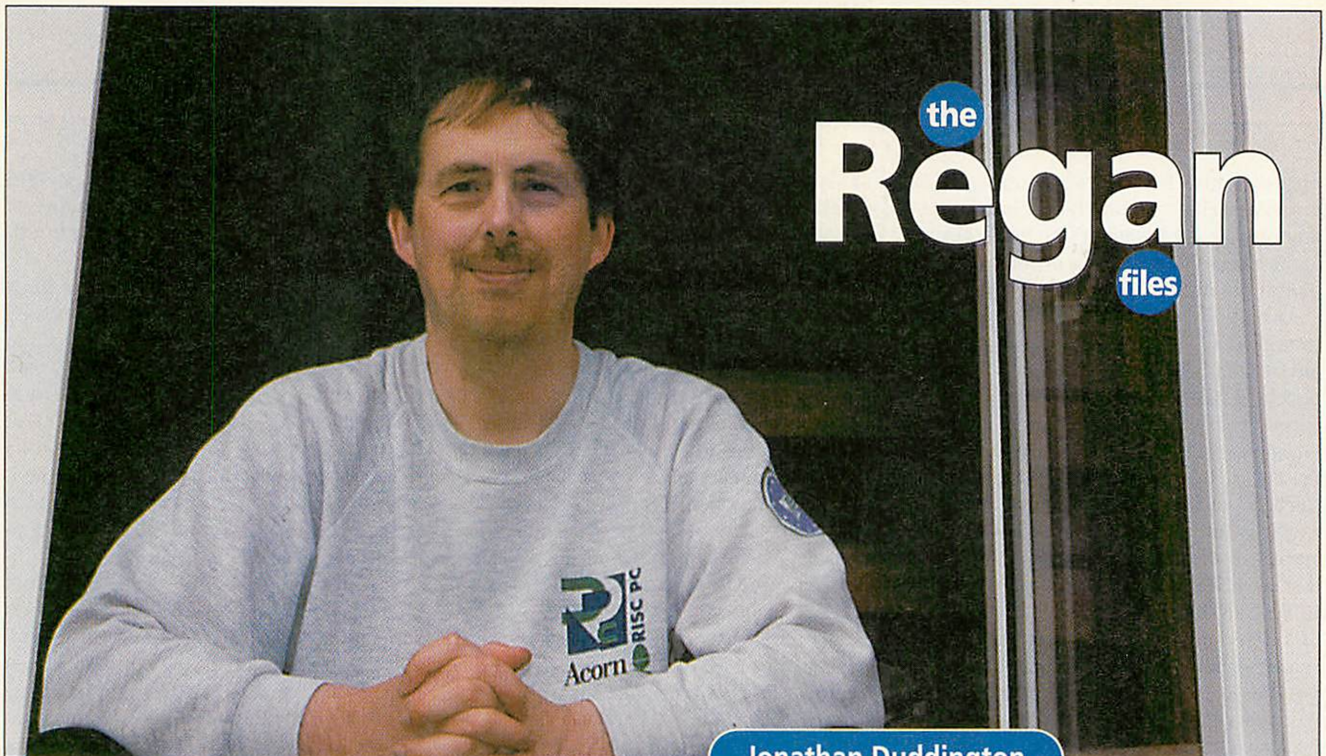
Mike Kinghan
imk@ttools.demon.co.uk

Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow *Acorn User* readers, then write in to:

Letters page, Acorn User, Media House, Adlington Park, Macclesfield, SK10 4NP
or e-mail: auletters@tau-press.com

Please note that we do not guarantee a personal reply to letters.



the Regan files

Jonathan Duddington

I was recently reading an article on proof reading – something which I have to do – which is extremely time consuming. The author was merrily describing spell checking and getting someone else to read it aloud, and I thought: 'You didn't want to do it like that, you wanted to use *Pluto*, didn't you now?'

Pluto is an internet news/mail reader and a text database, written and published by Jonathan Duddington. Pluto has speech built-in, making it ideal to read your text aloud to you, with the advantage over spell checker that a spell checker can will miss a wrong word if it is spelled correctly. Pluto reads what is there.

I find Jon at home, sitting in a video editing suite, editing videos of stock car racing. Stock car racing and speedway racing are his other passions.

'I got into stock car racing and speedway when I went along with a friend once, and from then on I was hooked,' explains Jon. 'I started helping out the guy who did the videoing and things just took off from there'.

Jon has created his own 'alternative' lifestyle. He is able to be at home during the day, sleep in the afternoon and stay up into the early hours of the next day programming. It does, of course, mean that his income is limited to how many copies of software he sells. At less than £50 a copy, he lives frugally.

'I was a software engineer at GEC telecommunications for 15 years after I left university. Then about seven years ago I was getting a bit fed up with it. I was working on a large project and it got to the state were you cannot really do much because it was too big, so not much room for doing anything interesting. I wanted to do something different.

'I realised I had a job which paid me much more than I needed so I left GEC and started doing work for myself, videoing of local sporting events, speedway racing and stock car racing and selling the videos. Nothing to do with computers at all; it was hard work but it was enjoyable because I was working for myself. I am sure there are lots of things I could have done to make more money with less effort.'

It was during this time that Jon started 'doing a bit' with his A440. Jon has always been interested in phonetics ever since when, as a little boy, he had been given some plastic alphabet letters.

> **'I am sure there are lots of things I could have done to make more money with less effort'**

'There were blue ones and there were orange ones' delights Jon. 'My father explained that the blue ones were consonants and the orange ones were vowels and there were a couple of yellow ones, Y and W which were in between. I said: "So there are 5 vowels in English," and he said: "No, there are about 20 vowels in English." I went straight to the library and got a couple of books and thought: yes, there are different sounds and there is an alphabet which has symbols for all of these international phonetic alphabet.'

Jon started to write a program to translate English text in to phonetics; a speech synthesiser. Really it was just a programming exercise – he thought he could just record the sounds and join them together. It turned out to be much more complicated, and became Jon's commercial program *Speak*.

'The reason I started doing Pluto is because a couple of years ago I decided to get on the Internet and signed up with Argonet. I soon realised that the news/mail readers which they supplied did not do what I wanted. I wanted to receive news and mail articles and store some away for future reference in an organised manner, so what I wanted was a news and mail reader combined with a text database.

'None were strong enough so I decided to do a text database. The original thought was to import mail and news into it, but that was too easy, so I thought why not do a news and mail reader? It couldn't be too difficult. It was. Again there was a lot more to it than I thought.'

I wondered where Jon stood on the great b*a*th or b*ar*th debate.

'I tried to make the speech as pleasing as I could to everybody. I also made a variety of voices. The speech has neither a strong south accent nor a northern one; it's more in the middle. I suppose it reflects where I am living now in the Midlands. Originally I come from Thornton Cleveleys'.

As did last month's interviewee, David Pilling. Perhaps there is something in the air up there.

Jill Regan AU

Special Pineapple RiscPC Computer price deals



Deal 'A' 233Mhz SA, 1.7Gb hd, 2Mb Vram 40Mb simm, x8 CD - £ 879 inc vat
Deal 'B' 233Mhz SA, 4.3Gb hd, 2Mb Vram 40Mb simm, x36 CD - £1049 inc vat
'High Spec' 233Mhz SA, 4.3hd, 2Mb Vram, 40Mb simm, x8 CD, 586-100 PC Card, PCPro & PC Exchange, Windows98, 15" digital monitor, 120 watt speakers - £ 1599 inc vat

Monitors when bought with any computer:- 14" Digital £99, 15" Digital £ 149, 17" Digital £ 269
All computers are supplied with Studio 24 v1 software and one years sub to the Virus Protection Scheme.

New 600 dpi Plustek Scanner - £149 inc vat!



The Plustek 9636 model is now available with Acorn software. This model has a 600 dpi optical resolution and 36 bit colour depth. It comes complete with PC software (including OCR) and Imagemaster and Twain for the Acorn. It plugs into the printer port but provides a 'through' connection for a printer, so no switch box is required. Price just £149 inc vat

General Upgrades

Harddrives - (p/ex for new RiscPC 1.7Gb HD)	
2.5Gb Harddrive	£ 75.00
4.3Gb Harddrive	£ 99.00
6.4Gb Harddrive	£ 139.00
Other sizes available - please ask	
Backplanes	
2 slot backplane	£ 34.00
2nd Slice (inc 4 slot backplane)	£ 89.00
Midi Card	
MIDIMax II - Midi Card	£ 92.83
SCSI Cards	
Eesox SCSI II	£145.00
Cumana SCSI II	£175.00
SCSI Cable	£ 16.00

RiscPC Memory

1Mb VRam	£ 69.00
2Mb VRam	£ 89.00
8Mb SIMM	£ 14.00
16Mb SIMM	£ 24.00
32Mb SIMM	£ 33.00
64Mb SIMM	£ 129.00

PC Cards & Software

DX4-100 PC Card	£ 229.00
586-100 (Acorn) PC Card	£ 329.00
586-133 (CJE) PC Card	£ 351.33
PC Pro & PC Exchange	£ 49.95
Windows 98 (Installed for you)	£ 79.00
MicroSoft Small Business Ed.	£179.00

Monitors

Acorn 14" AKF60	£ 264.00
Iiyama 17" 400 (S701GT)	£ 363.00
Iiyama 17" 400 Pro	£ 385.00
Iiyama 19" 450 Pro !NEW!	£ 527.00
CTX mons have (3 year on-site warnty)	
CTX 14" Digital Scan	£ 139.00
CTX 15" Digital Scan	£ 175.00
CTX 17" .28 70Khz Digital	£ 299.00
CTX 17" .26 92Khz Digital	£ 385.00

Internet

56,000 Flex modem - Flash U/G	£89.00
Acorn !Browse (CD only)	£39.99
Ant Internet Suite software	£116.33



Flatbed Colour Scanners

There are now a growing number of scanners which will work on RiscOS. The Epson GT5000 and the Plustek work on the parallel port so no extra interface is required.
All our scanner prices include Twain and Imagemaster software. SCSI scanner prices do not include the SCSI connecting cable. Studio24Pro instead of Imagemaster - just £30.00 extra!

Epson GT5500 SCSI	£259.00
Epson GT9500 par&SCSI	£519.00
Plustek Optic Pro 4831 300dpi	£129.00
Plustek OpticPro 9636 600dpi !!New!!	£149.00

SCSI Cards & Cables

Cumana SCSI II Card	£175.00
EESOX SCSI II Card	£145.00
50 mini 'D' to 50 Centronics	£16.00
50 mini 'D' to 25 'D' plug	£16.00
25 'D' plug to 50 Centronics	£13.99

Switch Boxes

These are ideal for parallel port switching between a printer & scanner

Parallel 2 way	£16.99
Parallel 4 way	£19.99
Serial 2 way	£19.99
25 'D' plug to 25 'D' plug	£4.99
25 'D' plug to 36 Centronics	£4.99
Monitor+Keyboard 2 way	£17.99
15way HD to 15way HD cable	£4.99
Male-male mini DIN keybrd cab	£3.00
Mini DIN to 5 pin keybrd adptr	£1.50
5 pin DIN to 5 pin DIN keybrd	£2.50

Many other types also available please ask



Hard Drives

Pineapples removable drive system is available for IDE and SCSI systems.

IDE removable system	£19.00
SCSI removable system	£25.00
IDE or SCSI cable	£5.00

Bare IDE harddrives

1.7Gb IDE	£79.00
2.0Gb IDE	£99.00
2.5Gb IDE	£109.00
4.3Gb IDE	£124.00
4.3Gb IDE (Cyclone 5.25")	£139.00
6.4Gb IDE	£159.00

IDE Expansion

x4 IDE Expansion card	£69.00

Bare SCSI harddrives

1.0Gb SCSI	£99.00
4.2Gb SCSI	£219.00
6.4Gb SCSI	£299.00

ZIP parallel port drives

Iomega parallel port ZIP drive	£149.00
Iomega SCSI internal ZIP	£129.00
Iomega internal IDE ZIP (for use with IDE expansion card)	£75.00
100Mb ZIP cartridge	£9.99
Pack of 5 Zip Cartridges	£45.00

Studio24Pro

'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool'- *Acorn User Mar96*

Now just ⋆ £99.00 ⋆

Users note FREE update v2.16 is now available.



PAL TV Coders

We now have two PAL TV coders available which allow the output of any Acorn Computer to be displayed on a normal TV or recorded onto a video recorder. Both models have S-VHS as well as standard video outputs. The VGA converter works in VGA and SVGA screen modes and is ideal for the RiscPC. Please ask for more info.

VGA Converter PAL Coder	£159.00
PLC/4 PAL Coder (mode 12,15)	£99.00
for A3020,A4000,A5000,RiscPC	



Pineapples Virus Protection Scheme has been running for over five years and is still being updated with new viruses on a regular basis. New software versions are sent out to members every three months and the total number of viruses which can be removed is over 100.

Joining fee just £28.20

Inexpensive multi-user licences

'If you're interested in virus protection, join the Pineapple virus protection scheme and buy Killer. Accept no alternative - 'Acorn User Feb 96

As an Acorn Centre of Technology Pineapple Software can help you with ALL your Acorn computer related problems.



Colour Printers

Canon BJC80 - portable col	£233.00
Canon BJC250	£149.00
Canon BJC620 - colour	£229.00
Canon BJC4300	£198.00
Canon BJC4550 (A3)	£287.00
Canon BJC5500 (A2)	£649.00
Epson Stylus 200 mono	£139.00
Epson Stylus 200 colour	£179.00
Epson Stylus Colour 440	£139.00
Epson Stylus Colour 640	£179.00
Epson Stylus Colour 850	£279.00
HP Deskjet 690C	£259.00
HP Deskjet 870C	£369.00
HP Laserjet 6L (laser mono)	£279.00

Other Items

Acorn !Browse (CD only)	£39.99
Acorn RiscCafe (JAVA)(CD)	£39.99
RiscOS 3.7 upgrade	£58.75
RiscOS3 PRM vols 1-4	£99.95
RiscOS3.6 PRM vol 5a	£29.75
Sibelius Junior v3.0	£55.00
Sibelius 6 software v3.5	£115.00
Sibelius 7 Student v3.5	£351.00
Sibelius 7 software v3.5	£699.00
Acorn Netstation (Ethernet)	£351.33
Acorn Netstation (Modem)	£351.33
A7000 upgrade to A7000+	£249.00

We have many items in stock which are not shown in this advert. Please ask for anything you require which may not be shown. We also undertake repairs and upgrades to all Acorn computer models. Collection can be arranged if necessary.

Pineapple Software

352 Green Lane, ILFORD
Essex IG3 9JS
Tel 0181 599 1476 Fax 0181 598 2343
email:- sales@pineaple.demon.co.uk
www:- http://www.pineaple.demon.co.uk

Terms:- All prices *include* 17.5% vat. Carriage £15 on computer systems. £5 on most other hardware. Other items free. Phone for quote outside UK.Official orders, cheques and all major credit cards accepted at no extra charge.

'Pineapple offer some of the finest and friendliest after sales support you will find' - Acorn User Mar 96
Why not come and visit us and see most of the Acorn range of computers and hardware.
Monday - Friday 0900 - 1730
Saturday 1000 - 1700

Acorn — Centres of Technology

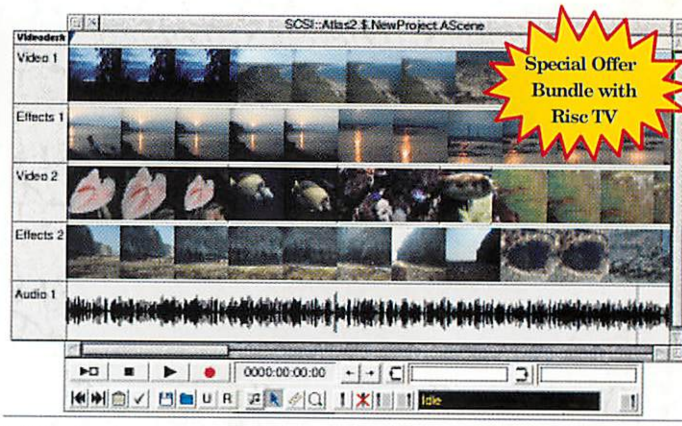
Videodesk

Non-Linear Video Editing System.

Videodesk is a significant advance in video editing for Acorn machines which allows full-size, full-colour and full-motion video to be compressed to disc in real-time. The compressed video is edited frame accurately and output back to video for recording or display. Unlike tape-based editing systems there is no generation loss and edits can be played back instantly.

Key Features:

- Composite and S-Video inputs and outputs.
- 50 fields per second capture and playback.
- 24 bit colour range.
- Resolution of up to 768 pixels x 576 lines.
- High-quality uncompressed still grabs.
- VITC Timecode input and output.
- 16 bit stereo audio inputs and outputs.
- Audio sampling at up to CD and DAT rates.
- Multiple audio tracks (polyphonic).
- High performance Replay movie capture.
- Multi-level undo and redo.
- Edit Decision List (EDL) generation.



Special Offer Bundle with Risc TV

Videodesk is supplied complete with video editing software as standard, which is sophisticated, flexible and simple-to-use. Editing is done on a multi-track time-line with separate audio and video tracks. Effects are generated digitally and include over 100 dissolves, wipes, fades and slides. Software is being continually developed and comprehensive titling software is now available at no extra cost. Titles are generated using the outline font system and can scroll, flash, fade and be overlayed onto the video or appear on their own. Titling is done digitally and does not require a Genlock.

RiscTV is supported for on-screen monitoring up to full-screen size and there is a specially priced bundle when purchased together with **Videodesk**. **RiscTV** and **Videodesk** are both available now. See below for more information about **RiscTV**.

Risc TV Desktop Television System.

Special Offer Free Keying Module



Risc TV is a unique multimedia digitiser complete with built-in television tuner and audio processor. It allows you to watch television on the desktop and digitise high quality still images from the tuner or an external video source.

RiscTV has special hardware which is used to update the screen, so your computer runs at full speed and the real-time display is always true colour (24 bit) irrespective of screen mode. The display can also be scaled to any size or made full-screen.

- Suitable for A5000, A7000, and Risc PC.
- On-screen sizes of over 1024 x 768.
- Real-time scaling, filtering and control of contrast, brightness and saturation.
- Auxiliary inputs for Composite & S-Video.
- Low-cost Teletext option.
- Optional keying module allows **Risc TV**'s display to be obscured by other objects and still provide real-time overlay.
- Optional audio upgrade provides NICAM stereo audio, 16 bit sound sampling, audio mixing, plus Replay movie capture.

i For the Complete Picture...

Irlam Instruments Ltd, Brunel Science Park, Brunel University, Kingston Lane, Uxbridge, Middlesex, UB8 3PQ. Tel/Fax 01895 811401. Email: sales@irlam.co.uk
Website: www.irlam-instruments.co.uk

Please note: Videodesk requires a RISC PC, large fast hard disc and 8Mb RAM minimum. A StrongARM processor is recommended. Check suitability for your computer before ordering. 1 years guarantee. E & OE.
*To obtain good quality video requires storage of around 1.5Mb per second (5.4Gb per hour).

Access

VISA